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## IN THIS ISSUE

### The Treatment of Chronic Intractable Heart Disease by Total Thyroidectomy

David D. Berlin, M.D., and Herrman L. Blumgart, M.D.

### Man as a Complete Organism—In Health and Disease

George Draper, M.D.

### Vagaries of Appendicitis

Frederick H. Flaherty, M.D.

### Organization of the Columbia County Department of Health

William D. Collins, M.D.

### Relation of Columbia County Department of Health to the Physician

Frank C. Maxon, M.D.

### A Modification of the Detroit Plan of Administering Public Health

Louis Van Hoesen, M.D.

### High- and Low-Power Roentgenographic Differentiation between Diverticulitis and Cancer of the Sigmoid

William H. Stewart, M.D., and H. Earl Illick, M.D.

### A Study of 671 Cases of Peptic Ulcer with Special Emphasis on 114 Postoperated Cases

Reynold E. Church, M.D., and J. William Hinton, M.D.

### The Schilling Hemogram: Its Value to the Surgeon

Arthur M. Dickinson, M.D.

Index—Vol. 34, 1934

## TABLE OF CONTENTS PAGE II

Pages 1047 to 1104

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## Treatment of the Toxemias of Pregnancy

by

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*Read at the Annual Meeting of the Medical Society of the State of New York, at New York City, April 4, 1933.*

WHEN the term "pregnancy toxemia" first was used in obstetric literature it was thought to be a definite entity caused by the presence of some specific toxin or toxins found only in the pregnant state. The search for these specific toxins so far has been unsuccessful and most of us now believe that many of the clinical types grouped under the general term "pregnancy toxemia" are not peculiar to pregnancy at all but are expressions of pathologic states brought to light for the first time, or aggravated, in the course of pregnancy.

One of the early exponents of this view was Dr. W. W. Herriek, who as consulting physician to the Sloane Hospital for Women for the past ten years has taken a special interest in those cases. In his work in our clinic he has the assistance of Dr. Jean Corwin and of Dr. Alvin J. B. Tillman. Special prenatal clinics under their direction have been organized for the observation and treatment of toxemia cases, and in the Hospital a special ward is set apart for those cases which require hospitalization. A follow-up clinic also is conducted and a special effort is being made to keep in touch with all cases over a period of years, in order to learn something more definite than is known at present of the ultimate outcome of these episodes in pregnancy and of their effects on future health and longevity. In all this work there is the closest possible cooperation between internist and obstetrician so that when it comes to making a decision with regard to treatment the patient gets the benefit of the experience of both. What I have to say today is the outcome of this combined experience, with grateful acknowledgment of the contribution made by our medical colleagues.

The subject of this communication is treatment as at present carried out in the Sloane Hospital for Women and a consideration of the results obtained.

## Treatment of Early Pregnancy Toxemia

We have discarded the old classification into three groups of neurotic, reflex, and toxic, and as a working basis for treatment regard them

all as of the toxic variety, at the same time admitting that there still is considerable doubt as to the nature of the toxic process involved and recognizing that many of the patients are of the nervous, imaginative type.

It seems logical to suppose that the same process is concerned in the mild as in the severe cases. In the latter there always is a history of some days or weeks of mild nausea or emesis which usually has gone on untreated. In our hands the most effective treatment for those early cases is the instruction of the patients regarding the frequency of eating and the necessity for an increase in carbohydrates and sugar in the diet. They are told to eat at least seven times a day—o cracker or some fruit first thing on waking and then before getting out of bed; breakfast; crackers or some fruit at 11:00 a.m.; lunch; afternoon tea with crackers or bread and jam at 4:00 p. m.; supper; and then always something before going to bed at night. We have found that these patients who have the most marked nausea in the evening, just before or during the evening meal, have had a five or six hour fast between that meal and lunch. A small meal at 4 o'clock usually will allow them full enjoyment of dinner. They are instructed to eat freely of carbohydrates in the form of bread stuffs and cereals; of sugar, as such and in the form of candy, jams and jellies, and of fresh fruits and green vegetables. A minimum of fat in the form of cream and of meat, a small amount only, are prescribed once a day.

If such a regime is instituted at the beginning of even slight nausea the trying period of the first three months can be got through comfortably. We instruct our private patients in this way at the first visit, even if they have no nausea, so that at its earliest appearance they may begin the regime. We are convinced that if treatment were begun thus early in all cases we would have fewer cases of the severe type of vomiting. The theory on which this treatment is based is that in early pregnancy the rapid growth of the ovum causes a deprivation of glycogen from the mother. The theory may be wrong, but the effects of the treatment are satisfactory in the great majority of cases.

The same line of treatment is followed with modification in the more severe cases where there is continuous nausea and frequent emesis. Such patients should be put to bed and kept quiet. Hospitalization is not always necessary but is advisable in many instances, as there is often a nervous element present. Quiet, freedom from household cares, and from visits of relatives and friends are important factors in the treatment of these individuals. For twenty-four hours all nourishment and fluids by mouth are withheld, and normal saline is given by rectum in quantities of six ounces every four hours. A colonic irrigation precedes the treatment and is repeated daily. If the patients are not dehydrated at the end of this twenty-four hours, two-hourly feeding is begun—ginger ale, thin toast with jelly, tea with sugar, cooked cereal, custard, stewed fruit, baked potato—all in small amounts at a time. If the patients do well on this the number of feedings is gradually reduced and the quantities increased, so that after some days they are eating only from five to seven times a day. It always is wise to find out the sort of food the patient likes and to let her have that if it conforms to the general scheme.

If dehydration is present at the end of the first twenty-four hours, or prior to it, 500 c.c. of 10 per cent glucose in normal saline are given intravenously every twelve hours, or every eight hours in severe cases. Nothing is given by mouth while they are getting the injections. The rectal saline is continued as in severe cases. The great majority show improvement after forty-eight hours of this treatment and mouth feeding is gradually resumed.

Sedatives of some kind are required by most patients. Phenobarbitol, 1 to 3 grains every four hours by hypodermic, or sodium bromide, grs. XXX and chloral grs. XV in the four-hourly rectal tap are given. In very nervous patients both forms of medication may be necessary. After feeding has begun the phenobarbitol in diminishing quantities is continued.

The mouth is apt to get dry, the tongue to crack, and a general stomatitis to develop. It is important that the mouth be kept as clean as possible. Dobell's solution or aluminum acetate, 2 per cent, are used as mouth washes. The lips are washed with lemon juice and glycerine, equal parts. If there is bleeding from the gums or lips the bleeding areas may be cauterized with silver nitrate (5 to 10 per cent).

If in spite of all treatment mentioned vomiting still continues, gastric lavage may be employed in addition, or the duodenal tube is passed and 10 per cent glucose, 10 per cent Karo syrup, and raw eggs are fed through it. In some patients the employment of gastric lavage or the duodenal bucket seems to work like a charm in stopping the vomiting. Al-

ways an intake of 3000 to 4000 c.c. of fluid per day is aimed at.

If after the employment of all these methods or at any time in the course of the illness the patient is steadily going down hill the question of terminating the pregnancy comes up. The decision for or against this is one of our most difficult clinical problems. The conditions demanding termination include tachycardia, jaundice, diminished output of urine, bleeding from the gums and nose together with ecchymotic areas round hypodermic injections, increasing nitrogen retention, mental apathy and disorientation, associated renal disease, such as pyelitis and prolonged low fever. The decision must be made on a general consideration of all these factors. Stander has reported two cases which showed marked retinal hemorrhages, one of whom died. We have had two patients both of which died, one in spite of therapeutic abortion and one during the course of her pregnancy. In these two patients there were renal lesions present. One had a cortical necrosis of the kidneys and the other a pyelonephritis. In all cases the eyes should be carefully examined.

#### Treatment of Late Pregnancy Toxemia

We already have stated that several distinct clinical entities are included in the term late pregnancy toxemia. Some of the symptoms and signs are common to all of them so that on their first detection it is usually impossible to assign the case to a definite clinical group. The conditions indicating the necessity for treatment may be systolic blood pressure above 130 mm. of mercury, albuminuria, edema of face and hands, headache, visual disturbances, vomiting, epigastric pain. Patients presenting any one, or any combination of, these symptoms require careful observation in bed either at home or in a hospital. During the period of investigation it is necessary to have a general form of treatment likely to be of benefit, or at least not harmful.

In the Sloane Hospital that routine for the ordinary case is a very simple one consisting of rest in bed and the administration of a salt poor diet, together with attention to the movement of the bowels. We formerly gave a low protein diet but now the diet is the ordinary one with low salt intake. This diet gives, approximately, 2,200 calories and contains 1.75 gms. of salt and 75 gms. of protein. All salt, as such, is excluded. All the food is prepared without the addition of salt. Salt poor bread is used. Two-and-one-half cups of milk are allowed which is about half of what the ordinary patient gets. High caloric extras, such as egg nogs and chocolate malted milk, grape juice, etc., are added when required. The following are typical menus for the day:

*Breakfast:* Orange; Farina with 10% cream and sugar; Egg; Toast, one slice with butter; Coffee with 10% cream and sugar.

*10:00 A. M.:* One glass of milk.

*Dinner:* Consomme; Roast beef; Fresh

green peas; Mashed squash; Riced potato; Bread, one slice with butter; Creamy rice pudding.

2:00 P. M.: Milk, one glass.

Supper: Creamed fresh mushrooms; Baked potato; Tomato salad; Bread, one slice with butter; Canned pears; Tea with 10% cream and sugar.

8:00 P. M.: Cocoa, one cup.

Sedatives, usually potassium bromide and chloral, are given when required in order to secure sleep and rest, and all extraneous noise is excluded as much as possible. These patients are all in a special ward, the temperature of which is kept at 78° to 80° F. Nothing more than this routine is given to the average case presenting a raised blood pressure, some albuminuria and, it may be, edema.

The patient is weighed on admission and as soon as possible a complete urinalysis, blood chemistry, and blood count are done. Blood pressure readings are taken daily and special search is made for any foci of infection, and sinuses and teeth are treated when the necessity is evident.

A number of the milder cases presenting only moderately high blood pressure and slight albuminuria and edema improve rapidly under this regime and may be discharged at the end of a week or ten days. They are instructed in the home preparation of the salt poor diets. They are enjoined to rest in bed for two or three hours every afternoon, to get sufficient sleep at night, and to report once a week to the special toxic clinic. If the patient is near term she is kept in hospital until after the time of delivery.

On the other hand, there are cases which do not seem to improve materially. The blood pressure remains more or less stationary and the albuminuria persists. In practically all, the edema disappears. Whilst apparently these patients get little benefit, we cannot help believing that a number are saved from more serious conditions, especially eclampsia. This is borne out by the fact that we have had only two cases of eclampsia in the past three years among patients treated in this way.

If, on admission or after, the blood pressure is above 200 systolic and the rise has been rapid, and especially if there is edema, severe headache, epigastric pain, visual disturbances, and exaggerated reflexes, the patients are regarded as likely to develop convulsions and are given  $\frac{1}{4}$  grain of morphine immediately, together with magnesium sulphate, 20 c.c. of a 10 per cent solution intravenously. The latter may be repeated in from two to twelve hours. In our experience this magnesium sulphate treatment has been followed by no untoward results and usually is effective in temporarily lowering the blood pressure, relieving the headache and, we believe, in averting convulsions. Its effects always are more pronounced in those cases of suddenly developing hypertension with the symptoms already mentioned than in those who have had a prolonged hypertension due

to definite vascular changes. Its administration, therefore, may be of diagnostic value.

In those cases with, in addition, marked edema we give hot, dry packs, surrounding the patient with warm blankets and arranging hot water bottles outside them, round the flanks and at the feet, with an ice bag on the head. The patient is put in such a pack twice a day for fifteen or twenty minutes. Colonic irrigations are given once daily. All these patients are kept constantly warm with blankets, not sheets, next to them. A very careful watch is kept; blood pressure readings are taken at frequent intervals, care always being taken not to disturb them unnecessarily. The magnesium sulphate is repeated if necessary and sedatives are continued. In the absence of definite signs of improvement the question of induction of labor or immediate delivery by cesarean section are considered. This will be taken up later.

If investigation shows the patient to be a definite nephritic and marked edema is present, magnesium sulphate, 2 ozs. every second day, is given by mouth, and the dry hot pack is used once a day. If the blood chemistry shows an increasing nitrogen retention, protein is cut down to as low as 20 gms. a day. If the urinary output diminishes, 50 c.c. of 50 per cent glucose is given intravenously every eight hours. If no improvement results, induction of labor has to be considered in the interest of both mother and child.

#### Therapeutic Abortion

Such is a very brief sketch of our ordinary routine treatment of cases seen in the late months of pregnancy. There remains to be considered that not inconsiderable group which we see in early pregnancy, and in which the question of therapeutic abortion arises. A patient who in the first three months of gestation shows definite signs of so called "toxemia" comes under one of two categories—chronic nephritis or chronic hypertension. In the former there is a history of some disease likely to have nephritic complication, such as scarlet fever, repeated sore throat or tonsillitis, or there is a history of "toxemia" in a former pregnancy. In some no relevant history can be obtained.

Already at the beginning of the pregnancy they show hypertension, albuminuria and, it may be, nitrogen retention. Such cases require careful study to determine whether it is wise to allow the pregnancy to continue. We must consider first the further damage likely to occur to the already damaged maternal kidneys and second, the chances of the survival of the child if the pregnancy is allowed to proceed. To take the last point first, our statistics show that out of 322 cases of nephritic toxemia of all degrees of severity, the prematurity rate was 25%, rising to 36.6% in the most severe types. This in itself means a high fetal and neo-natal death rate. Taking these premature births along with the births at term one found a total fetal mortality of

34.2% in all grades of nephritis, whilst in the severe types it is 69%. As most of these cases already evident in the early months are likely to be of the severe type in the later months we can hold out to them not more than a 50% chance of a living child. This fact must be taken into consideration in deciding for or against the continuation of the pregnancy. As regards the risk to the mother we have accumulated sufficient data to indicate that pregnancy in a nephritic is practically certain to increase renal damage and to shorten life. The indications for therapeutic abortion, therefore, are strong.

The same arguments in lesser degree apply to the hypertensive group. In 37 cases the fetal mortality was 9.7% rising to 16.7% in those cases which developed albuminuria in the later months. In those which have been followed for a period of months and years, a number have shown a high blood pressure and other evidence of cardio-vascular disease. Those that have been seen in succeeding pregnancies have had a higher level of blood pressure. We, therefore, consider a pronounced hypertension, with or without albuminuria, an indication for the induction of abortion.

#### Induction of Premature Labor

This may be indicated in cases of any type in which the pregnancy has advanced to beyond the period of viability and in which treatment has failed to control the condition. It also may be indicated in those milder cases of nephritis and hypertension in which, in a previous pregnancy or pregnancies, intrauterine death of the fetus has occurred before or at full term. We already have indicated that the fetal and neo-natal death rate in nephritic cases is 34.2 per cent. It is 42.8 per cent in the pre-eclampsics and 9.7 per cent in the hypertensives. A timely induction will save some of these babies, for intrauterine death usually occurs after the period viability and often just shortly before term.

These patients are not good surgical risks. They are prone to septic infection, so we hesitate to use surgical methods such as bag, bougie, or rupture of the membranes if they can be avoided. Where induction is indicated we try first of all the quinine, pituitary method. This, in our experience, is quite safe even in cases with marked hypertension, as the pituitary injections raise the blood pressure only a few points and the rise is temporary. Unfortunately, it is not always successful, especially if the pregnancy has still some weeks to go. When it fails recourse must be had to the mechanical means mentioned.

#### Cesarean Section

A cesarean section done prior to term always will give the baby a better chance than the induction of a premature labor. On the other hand the risk to the mother is greater. In cases where the desire for a living child is very great and in which it is inadvisable that any other pregnancy should occur, it may be

the method of election as it gives the opportunity for sterilization. In each case these advantages must be weighed against the added maternal risk. There can be no set rule, each case being judged by itself. We no longer do cesarean section or employ any other method of accouchement force in eclampsia, treating these cases according to the Stroganoff method. Our one exception is the fulminating type of eclampsia where, without any prodromal symptoms, the patient goes from one convulsion into another. Cesarean section may save the child, and apparently does not increase the maternal mortality, which is in the neighborhood of 33 per cent by any method of treatment. In the pre-eclamptic, unresponsive to treatment, we prefer the induction of labor to cesarean section, reserving the latter for those cases which present some added obstetrical indication such as an abnormal pelvis or rigid unretracted cervix.

#### Results of Pregnancy Toxemias

In the past three years, out of a total of 5,490 ward deliveries we have had seven cases of eclampsia. Two of these cases developed while the patients were in the wards being treated for toxemia. One patient was an emergency admission and had not been seen by us prior to her convulsive seizure. The other four were attending the prenatal clinic and nothing untoward had been noted in them at their last visits. Two of those patients had their first convulsion after delivery. All of the cases recovered.

The follow-up of our toxic cases is not yet nearly complete, as Dr. Herrick and his assistants are working on a fifteen to twenty year plan. We have followed a total of 464 toxic cases which have been delivered in the last twelve years. In them there are records of seventy-seven deaths. Forty-six of these deaths occurred some time after discharge from hospital. Fifteen of them were due to chronic nephritis, five to cerebral hemorrhage, and six to cardiac attacks—a total of twenty-six directly attributable to the toxic state. Nine deaths were from intercurrent diseases, or accident, and the cause of death in the remaining eleven could not be ascertained. When it is remembered that the great majority of those women are under thirty-five years of age this 16.5 per cent mortality is a high one. Of those that survived 36 per cent have persistent hypertension. We have records of seventy patients who had, either in the Sloane Hospital or elsewhere, a convulsive toxemia or eclampsia. Fifty-two of those have been followed. Of these fifty-two eighteen died either at the time of the seizure or afterwards, a mortality of 34.6 per cent.

These admittedly incomplete figures show that the pregnancy toxemias are serious, not only because of their immediate mortality but also because of the shortening of life from later cardio-vascular-renal disease.

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## Nephritis and Pregnancy

by

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*Read at the Annual Meeting of the Medical Society of the State of New York, at New York City, April 4, 1933.*

ONE of the most serious, and often unrecognized or neglected, complications of pregnancy is an underlying nephritis. Approximately one-quarter of our maternal death rate is due to the toxemias of pregnancy. The toxemias of pregnancy play an even more significant role in the maternal mortality, if we consider the end results following the completion of the puerperium and during the ensuing five years. Nephritis or nephritic toxemia has been regarded as one of the toxemias of pregnancy. Although an underlying chronic nephritis is, strictly speaking, not a true toxemia of pregnancy, such as vomiting, low reserve kidney, pre-eclampsia, and eclampsia, its symptomatology and clinical findings so often simulate one or other of these true toxemias of pregnancy that it is well that we consider it as a type of toxemia, in order that it may be properly recognized and treated.

When an underlying chronic nephritis in pregnancy is so considered, it constitutes almost one-quarter of all gestation toxemias, and appears as a complication in approximately three per cent of all pregnancies. By using the term "nephritis complicating pregnancy," we mean that the gravid patient has a renal disease, usually a chronic nephritis, which may have been the result of some infection, such as tonsillitis or scarlet fever, or perhaps even of repeated pregnancies. This condition is distinct and different from low reserve kidney or pre-eclampsia and eclampsia.

We should state here that eclampsia may result in chronic nephritis, just as scarlet fever may produce permanently damaged kidneys. In approximately one-fifth of eclampsia patients, this is the outcome, but, on the other hand, it must be clearly understood that nephritis plays no role in the etiology of eclampsia, in the same way as it plays no part in the etiology of scarlet fever.

Low reserve kidney usually does not result in damaged kidneys, as it is a very mild form of toxemia, clearing up under proper treatment and delivery. It is quite evident, then, that low reserve kidney, eclampsia, and pre-eclampsia are distinct entities from an underlying nephritis.

In this paper we are considering only nephritis as a complication of pregnancy. Our interest has been specifically focused on this type of toxemia as a result of a follow-up study over a ten-year period following the

diagnosis of nephritis in pregnancy. It was found that over 40 per cent of these women died within ten years after the recognition of this complication during pregnancy. We were led to conclude, after considering nephritis in nonpregnant women, that pregnancy itself hastens death in nephritic women, and that nephritis must be regarded as more serious than the other toxemias of pregnancy. The very grave prognosis has often been overlooked in that the doctor did not see or follow up his patient after the first two or three weeks of the puerperium. It was only in the five or ten-year follow-up study of these patients that we obtained a true index of the severity and prognosis in this complication.

### Types of Nephritis

In order to understand the significance of an underlying nephritis during pregnancy, we must have an appreciation of the various types of nephritides. Many classifications have been suggested, although, at present, it is generally accepted that there are three main forms: the hemorrhagic or glomerular type; the nonhemorrhagic arteriosclerotic or nephrosclerotic type; and the non-hemorrhagic degenerative type, also known as nephrosis, lipid or amyloid.

The first of these, glomerulonephritis, has an acute onset, either heals, improves to a latent stage, or, passing through a chronic stage of lesser or longer duration, which is usually edematous, ends in uremia. Volhard and Fahr further subdivide the glomerular type into diffuse and focal forms, the latter being recognized by its normal blood pressure. It is a disease of glomerular inflammation.

The second type, the arteriosclerotic or nephrosclerosis, has an insidious onset with marked hypertension and usually no, or very slight, edema. Later in this disease the patient may develop edema. In this type, the heart becomes involved, and death occurs from cardiac failure, apoplexy, or uremia. In this disease, the arterioles are affected, their lumina being contracted as a result of endarteritis and intimal hyperplasia. There may be a certain amount of glomerular destruction but no marked tubular degeneration.

In the third type, the degenerative or nephrosis, the onset may again be insidious, with marked edema and albuminuria, but no hypertension. The disease may end in cure or ultimately involve the glomeruli and the patient may die from uremia. The significant pathology in this type is a degenerated tubu-

lar epithelium. In the description of these types we have followed the excellent monograph of Van Slyke and his coworkers who have added so much to the better understanding of these forms of nephritis.

### Chronic Nephritis in Pregnancy

Rarely do we see an acute glomerulonephritis complicating pregnancy. The degenerative type, or nephrosis, although also very rarely seen, appears more frequently than the acute stage of glomerulonephritis. The usual form of nephritis complicating pregnancy is the chronic, either of an arteriosclerotic origin or following an acute or latent glomerulonephritis. The latter, also known as active chronic hemorrhagic nephritis, corresponds to Volhard and Fahr's nephrotic type of glomerulonephritis and to the so-called hemorrhagic chronic parenchymatous nephritis of the older writers. The arteriosclerotic type of nephritis or the nephrosclerosis of Volhard and Fahr is believed to occur more frequently than any other form of nephritis, and may be benign or malignant. The first clinical sign of the disease is hypertension with or without slight albuminuria. The benign form may continue as such for many years, the patient ultimately dying from circulatory rather than renal failure. In the malignant form, a decrease in renal function makes its appearance, death may occur from renal failure.

Undoubtedly, the majority of pregnant patients suffering from an underlying chronic nephritis fall into the nephrosclerosis group of Volhard and Fahr. The outstanding clinical features of this disease are the hypertension, slight albuminuria and cardiac enlargement, while in the chronic stage of a hemorrhagic or glomerulonephritis, the outstanding features are edema, a marked decrease in kidney function, slight or microscopic hematuria, and only slight hypertension with or without marked albuminuria. As it is not always easy or necessary to differentiate between the types of a chronic nephritis during pregnancy, we advocate the use of the term "chronic nephritis during pregnancy" and shall so refer to all our cases of an underlying chronic nephritis recognized during pregnancy, except where the findings clearly indicate a nephrosis.

### Statistics in Cases of Toxemias of Pregnancy

In this paper, we are presenting a study of all patients suffering from a chronic nephritis during pregnancy, who have been under care and treatment in the Woman's Clinic of the New York Hospital. The incidence of nephritis, the infant and maternal mortality, type of treatment, and the results obtained are considered. This study included patients having been seen in this Clinic over a six months' period beginning September 1, 1932. During this period, 1443 patients have been discharged from our

obstetrical service, and of this number 178 were discharged before delivery. There were 203 patients treated for a toxemia of pregnancy, of which 45 had chronic nephritis. Our figures may be presented as follows:

Total obstetrical patients discharged 1,443  
Total toxemia patients discharged .... 203  
Incidence of toxemia ..... 14.067%

Of the 203 toxemia patients—

40 were discharged before delivery  
163 were discharged after delivery

Of the 40 patients discharged before delivery, diagnoses were as follows:

Low reserve kidney ....	12
Chronic nephritis .....	10
Unclassified .....	13
Vomiting of pregnancy .	5
	<hr/>
	40

Of the 163 toxemia patients discharged after delivery, the diagnoses were as follows:

Low reserve kidney ....	97	.....	59.50%
Chronic nephritis .....	35	.....	21.47%
Unclassified .....	15	.....	9.20%
Pre-eclampsia .....	11	.....	6.74%
Eclampsia .....	3	.....	1.85%
Vomiting of pregnancy	2	.....	1.22%
		<hr/>	
			163

### Statistics in Cases of Chronic Nephritis

A study of 29 patients suffering from a chronic nephritis, shows that 23 of these were white and 6 colored. The age distribution was as follows:

16-20 years .....	3
21-25 " .....	8
26-30 " .....	10
31-35 " .....	7
36-40 " .....	1

Four of these patients were discharged before delivery and have not been delivered up to the present time. One patient was admitted from the year-return clinic. The ante-natal care was good (meaning the patient had visited the antenatal clinic three times or more) in 22 cases; defective in 4 cases, and 2 patients had never been seen in the antenatal clinic previous to admission to the Hospital.

All of these patients had negative Wassermann reactions and gave no history of anti-luetic treatments. Two patients had a further complication of chronic valvular heart disease. Seven patients had a history of a previous toxemia of pregnancy, 2 having had eclampsia, 2 others severe vomiting of pregnancy, and 3 a toxemia of unknown type. Fourteen of the patients of this group were

gravida 1, the others were distributed as follows:

Gravida 2	4
" 3	4
" 4	1
" 5	2
" 6	0
" 7	1
" 8	1
" 9	1

The types of delivery were as follows:

Spontaneous	18
Operative	11
Forceps	2
Labor induced by bougie	2
Breech extraction	2
Classical cesarean section	1
Classical cesarean section + tubal sterilization	2
Abortion, spontaneous	1
Abortion, therapeutic (subtotal hysterectomy)	1

The duration of labor was less than 20 hours in all except 1 case of 47 hours. The duration of the second stage was less than one hour except in 2 instances, and in both of these cases the patient was delivered by forceps. The puerperia were for the most part uncomplicated. One patient developed pyelitis and 6 had mild puerperal infections.

Out of the 22 full term and premature deliveries, there was 1 stillbirth, a macerated premature infant weighing 1880 grams. All the other infants were discharged from the hospital in good condition. Five had weighed less than 2500 grams at birth. There was one set of twins. There were no maternal deaths.

### Antenatal Care

The importance of having patients regis-

ter in an antenatal clinic early in their pregnancy is readily understood for better care can be given the patients. It also makes it possible to determine when the signs or symptoms of toxemia first appear. The number of visits made to the clinic, previous to delivery of the 29 patients studied, ranged from 1 to 18. In the cases under consideration, the blood pressure was 140/90, which we consider as the upper limit of normal, or above in 7 patients at the time of their first visit to the antenatal clinic; and of these, 3 were in the first half of their pregnancy. In the remaining cases followed in the clinic, 3 patients showed an elevation of blood pressure in the first half of pregnancy. In patients suffering from definite kidney disease, the blood pressure rises above normal earlier in pregnancy than it does in the other types of toxemia.

Not only is the blood pressure taken on each clinic visit, but a urine analysis is also done. Nine of the patients showed no albumin in the urine, but in the other cases the amount varied from a trace to 2 grams or over. A note is made of the amount of edema present. The weight of the patient is also taken on each visit.

On each visit the patients were carefully questioned as to symptoms. The common complaints were headache, dizzy spells, blurring of vision, vomiting, constipation, and edema. Attempts were made to regulate the patient's diet by having a dietitian interview each patient and instruct her regarding a proper diet.

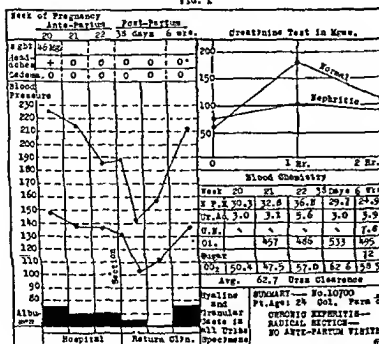
### Hospital Care

If the patients showed no improvement under the treatment possible in the out-patient clinic, they were admitted to the Hospital. Seven of the patients had admissions to the Hospital and were discharged during their antenatal period; several others were so ill that, following admission, they could not be discharged before delivery.

On admission to the Hospital, the patients are immediately put to bed and placed on a special diet (low protein diet with salt intake limited to 2 grams). In addition to the routine examination, a careful ophthalmoscopic examination of the eye grounds is made. If necessary, the pupils are dilated with homatropine. Eight of the 29 patients had retinal edema, a few showed tortuosity of the vessels, while the remainder were essentially normal. Daily urine analyses are made to determine the amount of albumin, and microscopic examination is carried out. It was found that 9 of the 29 cases showed the presence of hyaline and granular casts in the urine. The response of the blood pressure to rest in bed and treatment is followed daily.

In Figure 1, we present in a graphic manner the findings in the hospital of a typical case of chronic nephritis complicating

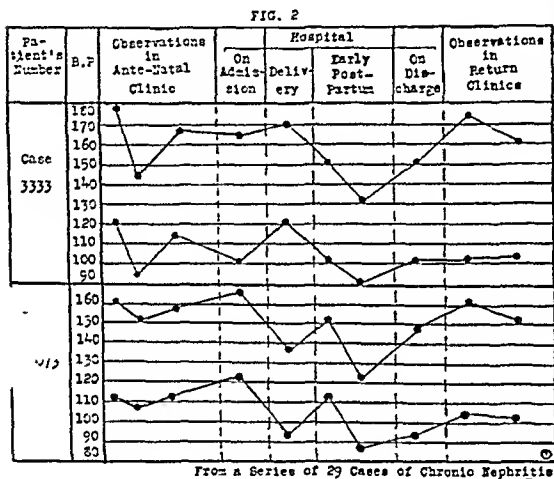
FIG. 1





nancy. The patient entered the hospital with a markedly elevated blood pressure, albuminuria, and kidney function tests below normal. Rest in bed and proper diet failed to produce marked improvement. An abdominal hysterectomy was performed during the twenty-second week and the patient kept in the hospital three weeks following the operation. Her subsequent course, as found at follow-up visits and shown on the chart, indicate a definite chronic nephritis. It should be pointed out here that the blood chemistry is not of great diagnostic or prognostic value, except in the very severe cases showing nitrogenous retention.

In Figure 2, we show the blood pressure findings, both systolic and diastolic, in 2 patients suffering from chronic nephritis. This chart shows clearly the course of the disease as seen by the hypertension.



Kidney Function Tests

The function of the kidneys is routinely investigated in these patients, as well as frequent blood chemistry determination made. The kidney function tests performed are the creatinine excretion test, urea clearance test, and the fifteen-minute phenolsulphonephthalein test. The results of these examinations on the patients are recorded at the time of admission to the hospital, at the time of delivery, during the puerperium, on discharge from the hospital, and some time later during the postpartum course.

The technique of these tests is not complicated and easily performed. The phenolsulphonephthalein test is performed by obtaining specimens of urine every fifteen minutes for a two hour period, after injection of an ampule of the dye intravenously. The percentage of the dye excreted is recorded under eight columns and the total excretion given in the last column. A curve drawn in comparison with the normal, gives a clear picture of the variations. (See Figure 3.)

RESULTS OF SEVERAL PHTHALEIN TESTS

	1	2	3	4	5	6	7	8
Normal .....	140	16	8	6	4	2	2	0
Chronic nephritis								
No. 706 .....	4	10	11	0	4	5	7	9
No. 781 .....	4	7	6	5	6	4	3	3
No. 2267 .....	12	15	9	6	4	3	2	0

From this table it will be seen that the excretion of the dye is delayed in appearance and greatly reduced in amount.

RESULTS OF UREA CLEARANCE TESTS

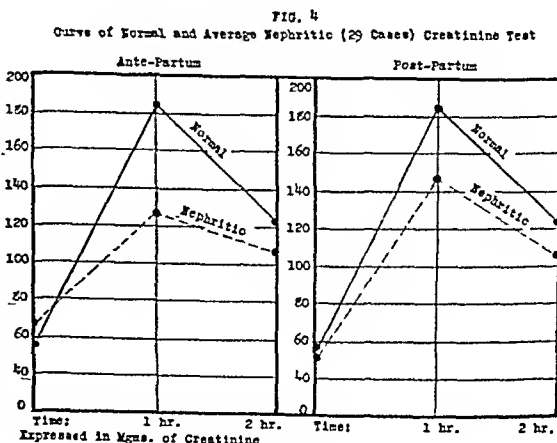
	1	2	Average
Normal .....	88.4	116	102.2
Chronic nephritis			
No. 8060 .....	51.2	60.8	55.8
No. 2267 .....	65.1	56	60
No. 781 .....	33.5	35.7	34.4

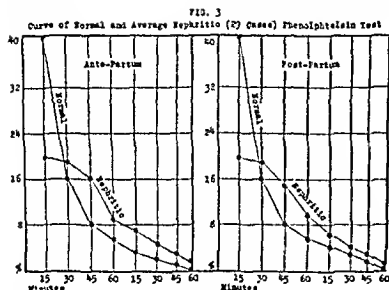
The creatinine test is performed by collecting the urine for one hour, then injecting intravenously 0.5 gm. of creatinine. The amount of creatinine excreted in the urine during the first and second hours after the injection is compared with the creatinine content of the urine before injection. Again the results are best recorded in a graph. (See Figure 4.)

RESULTS OF SEVERAL CREATININE TESTS

	Before Injection	1st hour	2nd hour
Normal .....	90	230	120
Chronic nephritis			
No. 3267 .....	64	126	100
No. 10073 .....	34	126	86
No. 11936 .....	25	106	146

In a normal individual, the excretion of creatinine at the end of the first hour should be three times that of the fasting or first specimen, and that at the end of the second hour should be twice that of the fasting specimen. An excretion below this indicates decreased kidney function.





It must be pointed out that a single determination of any one of these three kidney function tests is of very little value. Repeated determinations of the same test, as well as of one or both of the other tests, are essential to correctly interpret the kidney function in any given patient. We have not mentioned the Addis' cell count test, which is of value in certain of the nephritides, especially in the active chronic hemorrhagic type.

#### Treatment

Our views regarding treatment have undergone radical changes. In face of a maternal mortality of over 40 per cent, when it is calculated on a ten-year basis, we feel that treatment should be less conservative than has been heretofore practiced. We do not hesitate to advocate termination of pregnancy in a patient in whom a definite diagnosis of chronic nephritis is firmly established. Pregnancy, as it proceeds towards term, throws a greater and greater strain on the kidneys and undoubtedly shortens the lives of women suffering from an underlying nephritis. If the patient is near term and the child living, we usually advocate cesarean section with sterilization, as we cannot depend greatly on birth control. One cannot be radical in all patients, as each case has to be studied individually. The general principle on which sound treatment is based is the knowledge that chronic nephritis and pregnancy form an exceedingly serious combination, and that the continuation of a pregnancy or a subsequent

pregnancy may materially aggravate an underlying nephritis.

#### Conclusions

1. In 1443 obstetrical discharges from our clinic, there were 203 cases of toxemia of pregnancy, an incidence of 14.067 per cent.

2. Nephritis complicating pregnancy constituted 21.47 per cent of all toxemias of pregnancy.

3. The greatest number of pregnant patients suffering from an underlying chronic nephritis fall in the age group 26 to 30 years.

4. The fetal mortality in patients with nephritis is 4.54 per cent in this small series.

5. The immediate maternal mortality in patients with nephritis gives an erroneous impression of the gravity of this complication, as in a ten-year follow-up study, Stander and Peekham found a maternal mortality of 42.5 per cent.

6. Frequent antenatal examinations in all pregnant women is essential if we are to recognize, early, an underlying nephritis.

7. Hospitalization with careful study is necessary in all suspected cases of chronic nephritis. In order that a correct diagnosis may be made, the kidney function carefully evaluated and the proper treatment instituted.

8. Of all kidney function tests, we advocate the fifteen minute phenolsulphthalein, the urea clearance, and the creatinine excretion tests.

9. The blood chemistry is only of value where the nephritis is so severe as to be accompanied by nitrogenous retention. A normal blood chemistry does not rule out a chronic nephritis.

10. In view of the grave prognosis in nephritis complicated by pregnancy, we advocate fairly radical treatment, consisting of termination of pregnancy with sterilization in a certain percentage of these cases. However, each case has to be studied individually before one can determine the procedure of choice.

—York Ave., & 69th Street.

### National Institute for the Deaf in England Frames a New Code of Ethics

Complaints have been made in England by the National Institute for the Deaf that manufacturers of hearing aids have exploited and victimized the deaf by selling them devices unsuited to their particular needs and hence of no value to them whatever. Even the extremely deaf have been induced to buy instruments that turned out to be of no service, and often all financial refunds or readjustments

have been met only with refusal.

The Institute has framed a code of ethics to end these abuses, which dealers are asked to sign, and a growing number of journals now decline to take advertisements from firms which do not accept it. Benefit societies and other social welfare bodies are demanding similar pledges, before aiding the purchase of instruments.

## Treatment of Carcinoma of the Cervix

by

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Read at the Annual Meeting of the Medical Society of the State of New York, at New York City, April 5, 1933.

**C**ARCINOMA of the cervix, for the present at least, seems to be regarded as a lesion in which radiation therapy offers a better chance of relief of symptoms, prolongation of life and possible cure than can be obtained by surgical measures.

By this statement we do not mean to imply that surgeons have been won over to radiation therapy for all cases, as we are well aware that hysterectomy is still done by a few and no doubt to the patient's advantage in some instances.

Occasionally a surgeon operates because there are no adequate radiation facilities available. At other times because the patient objects strenuously to radiation and insists upon operation. Rarely, however, is the operation of the Wertheim type with complete removal of parametria and a long vaginal cuff. As a rule it is a simple panhysterectomy and can be regarded only as palliative rather than curative.

Actually only ten to fifteen per cent of the cases are seen sufficiently early, while the disease is still limited to the portio vaginalis of the cervix, to permit of satisfactory and thorough surgical removal.

Unless the hysterectomy is of the Wertheim type, an operation unfortunately associated with high morbidity and mortality, it will be of little permanent value in curing the disease, even in the early cases.

Radiation therapy came into use in an effort to solve the surgeon's problem and to permit him to save not only the favorable cases but to do something worth while for the seventy-five to eighty per cent of advanced and unfavorable cases which are not at all amenable to surgical cure, or even to a simple vaginal or abdominal hysterectomy. Such a procedure in an advanced cervical cancer is futile as the operative incisions pass directly through cancer-bearing structures and in a few weeks a rapid recurrence of ulcerating carcinoma appears at the vaginal vault, so that it is then difficult to believe that the cervix really had been removed. Such recurrences are extremely difficult to treat with any degree of success, even with radiation, as the removal of the uterus deprives us of our only chance to place radium safely in the center of the cancer-involved tissues and to deliver to them an effective radiation dose, one that may reasonably be expected to cause complete regression of all cancer growth in the field of

radiation without destroying important normal structures. We are therefore strongly opposed to hysterectomy when it can be avoided in advanced cervical cancer.

On the other hand, the presence of pyometra may compel us to do hysterectomy. Mild degrees of pyometra with only a small quantity of thick, yellow, nonodoruous exudate in a uterus of average size need not interfere with radiation and often will disappear in course of treatment. When, however, one meets with a foul-smelling exudate in an enlarged uterus with a dilated cavity, the case requires different management. In such cases we usually apply radium against the cervix by means of a vaginal applicator for 1000 to 2000 millicurie hours. After this treatment we dilate the cervical canal sufficiently to permit the placing of a rubber drainage tube the diameter of a lead pencil into the uterine cavity. This usually is kept in place for a week during which time the cavity is flushed out daily with mild antiseptic solutions. As soon thereafter as it seems safe, a radium tandem is placed in the cervical and lower uterine canal for the usual dosage of 3000 millicurie hours. It is difficult to say what the optimum time is for doing this, it may be one or two weeks after drainage was instituted or it may be later or in some cases it may never be feasible. When the pyometra is extensive and does not respond to drainage we believe hysterectomy (supracervical) is indicated whether or not one has been able to finish the planned radiation.

From time to time in carrying out routine radiation in cervical cancer, we meet with what properly may be called radiation-resistant cases. In such instances after completion of the full course of radiation with radium and x-rays, we observe that the lesion and the cervical tissues instead of cleaning up and diminishing in size are larger, swollen, rigid and really more bulky than before treatment was started.

It is quite evident that there has been no regression and indeed no satisfactory response to radiation. If six weeks after treatment such a condition exists we believe panhysterectomy, if at all feasible, is indicated as further radiation would only result in necrosis, ulceration and fistula, whereas the hysterectomy may permit complete healing of the vaginal vault and thereby protect the patient from foul discharge and hemorrhage while she lives. Of course such a procedure is only palliative, is recognized as such and is not

planned to cure the patient of cancer. With the occasional exceptions referred to we believe hysterectomy has little or no place in the routine treatment of cervical cancer.

At first radiation for cancer was carried on to some extent with roentgen rays alone but it received its greatest impetus from the discovery of radium in 1898.

Carcinoma of the cervix was one of the first of the major cancer lesions to be attacked systematically by treatment with radium. The response to treatment was so satisfactory that the method rapidly spread throughout the world. The chief difficulty at first was the scarcity of the element and its high cost. In recent years additional large radium bearing deposits have been found and the cost of radium has gone down considerably. Its use has become more widespread and there is now more accurate knowledge of its therapeutic value and limitations.

Etiologically it is felt that there must be a close association between cervical trauma in evidence to dilatation of the cervix in labor and the subsequent development of carcinoma in the cervix, as 90 per cent to 94 per cent of the women in our series have been pregnant and have given birth through the cervix. It would seem therefore that careful observation and treatment of benign cervical lesions subsequent to pregnancy might be an important factor in diminishing the incidence of cervical cancer.

Schmidt's clinical classification of cancer of the cervix into four groups is an excellent one. Unfortunately very few cases are seen sufficiently early in their course, while the disease is still limited to the cervix and without any enlargement of it, to be placed in group one. Such cases when seen should result in 75 to 85 per cent five year cures.

Because of the infrequency of such cases we combine Schmidt's groups one and two in to one group which we call early or favorable and in which we may expect about a fifty per cent five year cure rate. Although the term borderline group still is used by us we gradually are dropping it and placing the cases either in the early group or in the advanced group in which there is a 15 to 20 per cent chance of obtaining a five year cure. All other extensively diseased cases are placed in the palliative group in which we do not expect them to survive five years.

Our classification then consists of (1) an early or favorable group, (2) an advanced or unfavorable group, and (3) a palliative group.

Such classifications are subject to error due to the personal equation of the physician as is evidenced by the fact that some of our supposedly early cases die within one year after treatment is given and an occasional so called palliative case survives five or more years.

It becomes difficult, therefore, to correlate

statistics from different clinics because of unavoidable errors in the assignment of cases to different groups. We believe, therefore, that the ultimate test of any method of treatment may reasonably be based upon the total five year salvage of all cases treated by that method.

It is interesting to note that most of the clinics with well organized departments of radiation obtain 20 to 25 per cent total salvage of all cervix cases. This means that only one out of every five cases seen can expect to survive five or more years.

This is certainly a very discouraging situation, and one deserving every effort on our part toward improvement.

Of course, the earlier the diagnosis the greater the chance of effecting a cure. But earlier diagnosis seems out of the question until all women who have borne children can be induced to resort to periodic pelvic examinations at intervals of nine to twelve months in order that suspicious changes in the cervical tissues may be detected and checked up by biopsy if necessary. The important and only symptom which attracts the patient's attention is the unexpected appearance of bleeding from the genital tract. Often this is observed only in association with intercourse or following a vaginal douche, so called contact bleeding. It is self evident that by the time sufficient disease is present to cause enough ulceration and destruction of tissue to permit obvious bleeding, the disease cannot be regarded as early for no doubt lymphatic contamination and spread have already occurred. Thus early diagnosis must rest upon visual observation and biopsy by the physician.

Carcinoma of the cervix, histologically, in a series of 1574 cases reported by us, was of the squamous epidermoid type in 97.3 per cent of the cases. The remaining 2.7 per cent were of the glandular or adenocarcinoma type.

As we have said before the earlier the diagnosis the better the prospect of a cure and this is true regardless of the histologic type of cancer present.

However in the more advanced cases we believe that other things being equal the less mature cancer cell, so called embryonal or anaplastic cell type of tumor, is more radiation sensitive than the tumor composed of fully developed adult squamous cell structure and therefore under radiation therapy gives a much better prognosis than under surgical treatment.

Since about 80 per cent of cervix cases are made up of the more radiation sensitive cell types it would seem that this probably accounts for the satisfactory response of the primary lesion to treatment.

Under the plan of treatment at present in vogue on the Gynecological Service in the Memorial Hospital we find that the primary

lesion in and about the cervix will disappear in four to six weeks in practically every instance, in which the response is satisfactory. In general the cervical lesion does not give us much concern for we know we can dispose of it in all but the most advanced and hopeless cases. But we must not let this deceive us.

It is the cancer that has invaded other pelvic structures distant from the cervix that will ultimately and with much coincident pain and distress terminate the life of the patient unless we can do something to eliminate it. When one depends for cure upon radium alone, placed in the cervical canal, he should realize that cancer cells more than one and a half inches away from the applicator used rarely will receive enough effective radiation to cause their disappearance. By using vaginal applicators as well as intrauterine, the tissue dose of radiation in the parametria can be somewhat increased but it is doubtful if we can obtain enough radiation effect two inches (5 cm.) away from the cervical canal to eliminate cancer at or beyond that point.

With this in mind we have resorted, consistently and as an important part of our routine treatment of all cervix cancer cases for the past eleven years, to external radiation of the entire pelvic field with roentgen ray directed through two anterior and two posterior portals.

For the past seven years this has been done with 200 K. V. machines and for four years we have in all but the earliest or most advanced cases given the x-ray cycle first and delayed the radium applications until ten to fourteen days after the x-ray cycle is finished.

This routine is regarded by us as important and possessing many advantages in all ulcerated, advanced cancers. The lesions are

usually infected, there is considerable pelvic lymphangitis, the patients are suffering constitutionally from toxic absorption. Such infected lesions are not desirable or favorable sites for the application of radium.

With our routine of x-ray first, the appearance of the primary cervical lesion changes markedly, the superficial fungating infected surface disappears, the surrounding edema subsides, the lesion is smaller and the uterus acquires more mobility. We have prepared the lesion and the adjoining tissues so that they are in much better condition to respond satisfactorily to radium applications and there seems to be less constitutional and pelvic disturbance with or following the radium treatment.

Our plan of treatment, which has been described many times, is called the "cross-fire radiation method" and consists of (a) a high voltage x-ray cycle of four treatments 700 R units each, (b) 10 to 14 days later radium is applied to the vaginal surface of the lesion by means of vaginal applicators for 1000 to 2000 millicurie hours, (c) the following day under anesthesia two radium capsules in tandem formation are placed in the cervical and supracervical canals for 2000 and 1000 millicurie hours respectively, (d) eight weeks following the first x-ray cycle a second similar x-ray cycle is given.

During treatment and until the cervical lesion is entirely healed the patient is advised to use vaginal douches, once or twice daily, of potassium permanganate solution. Interstitial radiation with needles or seeds is not used as part of our routine treatment but may be used as a later treatment for any portion of the lesion that fails to completely regress, but this is not often necessary.

—121 East 60th Street

### French Academy of Medicine Wages Campaign in the Interest of Public Safety

THE French Academy of Medicine is waging a campaign for the examination of automobile drivers, in the interest of public safety, but is encountering opposition from interests that fear it would interfere with the sale of cars.

Thirty-six taxi drivers who have had accidents were examined by a physician and ten were affected with dementia paralytica, twelve with psychasthenia linked with impulses and obsessions, two with alcoholic dementia, two with epilepsy, two with toxicomania, four with alcoholism and three with dementia praecox.

Another physician addressed the Convention on the Safety of Highways and urged that

driving permits be refused to persons with serious nervous troubles, those suffering from hysteria, epileptics, psychopaths, and chronic alcohol addicts. The convention was cold to these proposals, however, we are told, and the daily press refused articles on the subject through fear of offending automobile advertisers.

Some hope is felt that the accident insurance companies may take a sympathetic attitude as it is to their interest to eliminate drivers who cause accidents, but any reduction in the number of drivers would also cut the number of accident policies and premiums, so even the insurance companies cannot be counted upon.

## The Treatment of Tumors of the Ovary

by

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THE problem in the treatment of ovarian tumors is quite different from that of the uterine growths which have just been discussed. In the case of cancer of the cervix and of the corpus and, to some extent, in that of uterine fibroids, one is dealing with a relatively homogeneous group of tumors whose course can be predicted with some certainty as soon as their presence is detected. With cancer of the uterus, furthermore, the disease itself is so grave that no consideration need be given the further function of the reproductive organs. For the treatment of such tumors generalizations are possible and the problem of therapy is readily reduced to a decision between rival forms of technique.

The special difficulty in the treatment of ovarian tumors arises from the existence of many types which differ widely in their tendencies for further growth and for the development of certain complications. The particular requirement in the treatment of these tumors is, therefore, an additional step in diagnosis for the differentiation of the many special types and with this an adequate knowledge of the potentialities of each. It is only with this information that one can select a form of treatment which will permit every possible conservation of function and at the same time avoid the preservation of organs which may be a source of future danger to the patient.

The extent of treatment required in a given case of ovarian tumor is dependent upon four variable characteristics which may be listed as follows:

1. The tendency to develop to a great size is an important consideration in deciding the first question of whether or not to operate. Certain of the small, non-neoplastic cysts will remain relatively stationary or will regress, while others, such

as the pseudomucinous cysts, will almost inevitably reach enormous proportions.

2. The tendency to develop various complications, particularly torsion, represents a hazard of varying importance among the different types of even the benign tumors and under certain circumstances is a reason against delay in operating.

3. The tendency to bilateral development must be the chief guide in determining the advisability of limiting the operation in a given case to the removal of only one ovary.

4. The frequency of the malignant transformation of benign tumors remains a disputed question. Percentages, however, are offered in the literature based either on the cases in which malignant areas are found within otherwise benign tumors, or on the proportion of the malignant to the benign growths among tumors of supposedly similar histogenesis.

Due allowance must be made for an age variation which will justify in young women a slightly greater risk of future trouble in the interest of the conservation of the ovarian function. Nevertheless, on the basis of the four considerations just noted, one may attempt a somewhat arbitrary classification of ovarian tumors according to the extent of the treatment required. The classification to follow is based on statistics drawn in part from cases treated on the Roosevelt Hospital Gynecological Service, in part from already published series from other institutions.

### Non-Neoplastic Cysts and Endometriosis

- A. The corpus luteum and follicle cysts are in most cases temporary structures present during one menstrual cycle or persisting for only a few months. (See Table 1.)

Table 1—NON-NEOPLASTIC CYSTS AND ENDOMETRIOSIS

	Size	Bilateral Development	Malignant Transformation	Complications
Follicle and Corpus Luteum Cysts.	Small. Spontaneous disappearance.	Frequent.	Never.	Menstrual disturbances. Hemorrhage, rare. Pain.
Endometrial (Chocolate) Cysts.	Usually small. Spontaneous regression after menopause or operation.	43% in present series.	Doubtful (Theory of Sampson—10).	Adhesions. Intestinal obstruction. Dysmenorrhea.

Table 2—METHODS OF TREATMENT OF ENDOMETRICAL CYSTS OF OVARY, 1926-1930

	Ages 26-39		Ages 40-52	
	Uterus normal	Fibroids	Uterus normal	Fibroids
Hysterectomy Bilat. Salp.-ooph.	2	4	3	6
Hysterectomy Unilat. Salp.-ooph.	0	2	0	1
Unilat. Salp.-ooph. Partial oophorectomy.	5	0	0	0
Unilat. Salp.-ooph. (My- omectomy in 4 cases).	5	4	0	0

On account of the relative frequency of these minor cystic enlargements of the ovary, the treatment in young women of cysts under three inches in diameter should properly be begun by a period of observation before surgery is undertaken. If such cysts are found after the abdomen is opened, the maximum operation should be the enucleation of the cyst or a partial oophorectomy. Under two special circumstances there is an opportunity for intelligent conservatism. In patients in whom cysts of the ovary are found after a previous gynecologic operation, a second should certainly not be undertaken till the pathologic findings at the first have been ascertained, for such recurrent cysts will as a rule prove to be of this harmless type. A less common problem is found in the multiple corpus luteum cysts occurring in association with hydatidiform mole which also tend to disappear spontaneously after the cure of the uterine disorder. Care should be taken to avoid the mistake of operating on the ovary instead of the uterus as was done in a case reported in the last year (Moroudis).

B. The teaching that endometriosis is due to implantations usually widely spread

throughout the pelvis and that these implants are dependent upon ovarian activity for their growth, has resulted in a tendency to radicalism in the treatment of this disease to produce a suppression of the ovarian function. Several recent reports, however, notably one by Seitz (11) of Frankfurt, indicate that at least symptomatic cures may be expected by relatively conservative operations. I have reviewed the thirty-two cases of endometriosis of the ovary treated at the Roosevelt Hospital from 1926 to 1930 and in Table 2, the extent of the operations is indicated. This table shows also that the type of treatment of this disease often depends, not upon the extent of the endometriosis itself, but upon the presence of associated fibroids. In the absence of these tumors it was necessary in young women to remove the uterus in only two of twelve cases, while even with fibroids as a complication, four uteri were preserved by means of a myomectomy combined with removal of a unilateral endometrial cyst. None of these cases have required further treatment so that a conservative approach to endometrial lesions of the ovary is now our rule. Treatment of endometriosis by a partial or a complete cas-

Table 3—COMMON BENIGN TUMORS—PREDOMINANTLY UNILATERAL

	Size	Bilateral Development	Malignant Transformation	Complications
Pseudomucinous Cysts.	Very large.	Unusual: 1.03% (4) 4.6 % (7) 5.6 % (13) 6.8 % (12)	1.9%(9) 5.6% (4) 6.7% (13)	Torsion: 11.53% (4) 27.4 % (13) Rupture. Pseudomyxoma: 2.07% (13) 5.6 % (4)
Dermoid.	Moderate size.	Infrequent: 8.0% (12) 9.8% (4) 13.1% (7) 18.4% (13)	6% (13)	Torsion: 9.4% (4) 18.0% (13) Perforation. Suppuration.
Fibromas.	Variable.	Rare: 0% (13) 2% (4) 13% (12)	Sarcoma?	Torsion: 36 % (5) 3.6% (3) Ascites.

Table 4—PAPILLARY CYSTADENOMA—STRONG BILATERAL TENDENCY

	Size	Bilateral Development	Malignant Transformation	Complications
Papillary Serous Cystadenomas.	Moderate size.	19% (13) 27% (12) 30% (14) 60% (9) Coarse Pap: 17% (4) Fine Pap: 50% (4)	Unproven but perhaps frequent. 45.2% (13)	Torsion: 10% (13) 8% (4) Ascites. Peritoneal implantations.

tration dose of x-ray has been advocated (Albrecht 1) but should not be employed unless the diagnosis is first established, which rarely is possible until exploratory laparotomy has given surgery the first opportunity to cure the disease with preservation of the ovarian function. X-ray in endometriosis has its chief place therefore in recurrent cases, or cases with persistent symptoms after a conservative operation.

#### Benign Tumors Predominantly Unilateral

A second group of neoplasms which as a rule occur as unilateral cysts are usually treated by removal of the affected ovary only. This rule may be varied to permit the preservation of a little of the affected organ in young women, or the prophylactic removal of even the apparently sound second ovary in women after or near the menopause. (See Table 3.) These tumors include the dermoid, the fibroma and the pseudomucinous cyst. The presence of any one of these tumors forms a definite indication for surgical intervention, for various types of complications such as great size, torsion, suppuration and pressure on surrounding organs are common. Disease of the second ovary is infrequent, however, and malignant change is rare.

#### Benign Tumors with Bilateral Tendency

One group of tumors, usually classified as benign, has a strong tendency to bilateral development and apparently a close relationship with the malignant growths. These are the papillary cystadenomas. In the Roosevelt Hospital series (14) approximately a third were bilateral and in four cases disseminated peritoneal implants were present (see Table 4). The special liability of the opposite ovary to be involved and the difficulty of distinguishing these papillary tumors from the papillary cystadenocarcinomas, sometimes even under the microscope, makes special care in their handling necessary. In all cases in which a conservative operation is contemplated, microscopic examination by frozen section should be made if possible before the abdomen is closed and in all doubtful cases, particularly in women over thirty-five years of age, both adnexa should be removed. This probably is more essential in certain forms, notably those with slender papillae and those

with papillae on the outside of the cyst than in the other type with coarse, sessile growths on the inner surface.

The cases with papillary implants on the peritoneum deserve special attention. I have recently reported four such cases (15) in which spontaneous regression of these implants has apparently occurred since the patients have remained well over long periods in spite of an incomplete removal of the growth by the surgeon. Such cases have been reported fairly frequently and afford some hope for a few patients who at first appear to have a hopeless prognosis. The possibility of this type of growth being present should therefore be considered before any case is given up as inoperable.

#### Carcinoma of the Ovary

At three stages in the treatment of a case of ovarian carcinoma decisions must be reached as to the course to be followed. (1) When the patient is first seen, whether an operation is to be performed; (2) when the abdomen is open, how extensive an operation is to be

Table 5  
OPERATIVE MORTALITY IN CANCER OF THE OVARY, 1910-1932

	Operations	Deaths	Mortality Rate
Recurrent	8	0	0%
Inoperable Exploration only .....	20	3	15%
Partial excision .....	11	2	18%
Hysterectomy .....	21	2	10%
Borderline Extension to omentum ..	7	0	0%
Extension to uterus and tubes .....	8	2	25%
Operable Bilateral ...	14	0	0%
Unilateral ..	24	1	4%
Total .....	113	10	9%



Table 6—PALLIATIVE EFFECTS OF RADIATION ON CASES THAT DIED AS MEASURED BY LIFE AFTER TREATMENT

	Unradiated Cases		Radiated Cases	
	Number of Cases	Average Dur. of Life	Number of Cases	Average Dur. of Life
Recurrent cases .....	3	27	3	9
Inoperable cases .....	15	8	9	7
Borderline cases .....	4	16	2	30
Operable cases .....	5	12	3	18
Total .....	27	12 mos.	17	11.7 mos.

undertaken, and (3) after the operation is complete, whether x-ray is to be given.

1. *Operability.* In many cases of ovarian cancer a definite diagnosis is not arrived at till the abdomen has been opened so that one must recognize laparotomy as usually the first procedure. This should not, however, be the invariable approach because, as Table 5 shows, the surgical exploration of advanced cases is accompanied by a high mortality rate.

Attempt should be made therefore, to eliminate two categories from the group to be operated upon. (1) In all cases of apparently malignant ovarian tumor the possibility of the growth being secondary in the ovary must be thought of, x-rays of the gastro-intestinal tract made, and operation given up when any other lesion besides the ovarian is discovered.

Certain very advanced cases with ascites, exia, large pelvic tumors and upper ab-

dominal masses are readily recognizable as inoperable and these cases should have their treatment limited to external radiation.

2. *The extent of the operation.* When at the time of operation the growth is found apparently confined to one or both ovaries, there is a general agreement that a complete hysterectomy should be performed, with the removal of both appendages. The preservation of an apparently uninvolved ovary is rarely to be considered, for as Norris (8) has recently shown, in 17.5% of such cases the grossly normal ovary is later found in the laboratory to contain foci of cancer cells. The preservation of the uterus as a holder for the later use of radium has been recommended (Heyman 2), but this procedure has not met with wide approval and should not be employed except in the advanced cases. Radiation from this source is too limited in its scope to outweigh the danger of retaining an organ with possible metastasis.

Table 7  
RESULTS OF TREATMENT OF CANCER OF THE OVARY, 1910-1927

Total Cases—84. Five year cures—7.  
Absolute cure rate—8%.

	Alive	Dead or Recurrent	Untraced
Recurrent ...		6	
Inoperable Exploration only .....		16	
Partial excision of tumor .....		10	
Hysterectomy .....		14	
Borderline Extension to omentum ..		6	1
Extension to uterus and tubes .....		2	4
Operable Bilateral ...	2	4	1
Unilateral ..	5	5	8
Total .....	7	63	14

The extension of the operation to the removal of single metastatic lesions from organs outside of the pelvis is a dubious procedure. Only in the case of an isolated metastasis in the omentum whose removal does not increase the severity of the operation to an appreciable degree, is such a procedure justifiable and one patient so treated at the Roosevelt Hospital was in good health when last seen four years after her operation. Resection of part of the bladder or intestine was carried out in a few of the earlier cases and proved both futile and dangerous.

When cancer is found widely disseminated on the pelvic or general peritoneum, a question arises as to whether any surgical procedure should be carried out. Such a condition was found in approximately half of the Roosevelt primary cases. It has been our practice under such conditions to remove as much of the tumor tissue as possible, partly because of the temporary palliation, partly because of the improved psychological effect on the patient resulting from the disappearance of visible evidence of tumor, partly because a persistent although perhaps unfounded belief exists that x-ray may be more efficient when directed at smaller masses of tissue.

3. *Postoperative Radiation.* In view of the bad results obtained by the simple surgical treatment of ovarian cancer, postoperative radiation therapy should be given in practically all cases. This opinion is held as a result of favorable reports from outside sources although our own series shows no cures and no increase in the average duration of life attributable to x-ray or radium therapy. (See Table 6.) The relative failure in this series is very likely dependent upon inadequate dosage.

The absolute five-year cure rate in this series of cases amounted to only eight per cent (Table 7). These unfavorable results find their explanation in the fact that two-thirds of the cases were actually inoperable upon their admission to the hospital. An increase

in the number of cures is here as elsewhere largely dependent upon better diagnosis but the prospect of an earlier recognition of tumors situated deep in the pelvis in relatively functionless organs is not a hopeful one.

In conclusion the initial premise of this paper may be restated. When tumors of the ovary are considered as a whole, the problem of their treatment is not primarily a technical one but one of differentiation of the special types. It is only by the recognition of the varied potentialities of the members of the group that treatment can be decided upon which will give the patient the greatest possible chance for preservation of function with, at the same time, the least risk of further trouble as a result of ill considered conservatism.

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National Research Council, \$5,000 for special research in the department of anatomy.

# The Treatment of Uterine Myomata

## A Review of 500 Cases

by

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Philadelphia, Pa.

From the Dept. of Gynecology, Hospital of the University of Pennsylvania. Read by invitation at the Annual Meeting of the Medical Society of the State of New York, at New York City, April 5, 1933.

**N**O lesion of the female pelvis requires more careful individualization in the choice of treatment than a uterine myoma. In some clinics operation is the method of choice in all cases, while others employ irradiation to the exclusion of surgical measures. We believe that both of these plans are to be condemned, each method has its advantages and limitations; each patient presents a different problem, and the choice of operation or irradiation can be determined only after judicious consideration of all factors concerned. This decision can be made only by the gynecologist who is familiar with both forms of treatment. Accuracy of diagnosis is essential. Too frequently the gynecologist is consulted only after irradiation has failed to effect satisfactory results in patients ill suited to this method of treatment.

We share the commonly accepted belief that many myomata require no treatment. This applies particularly to small symptomless tumors in women who are approaching or who have passed beyond the menopause. Cessation of ovarian function will be followed by regression and even complete disappearance of the tumor in most instances.

The larger number, however, require treatment because of abnormal bleeding, pressure symptoms or associated pelvic pathology. This report is based on a review of the methods of treatment employed and the end results obtained in 500 consecutive cases from the service of Dr. Floyd E. Keene in the Hospital of the University of Pennsylvania.

Dr. John G. Clark adopted the use of radium in the treatment of myomata in 1913. During these years careful follow-up studies have been made of patients treated by both irradiation and operation. As the result of this experience, certain definite rules have been formulated which guide us in the selection of treatment for the individual case.

The following conditions are ideal for the use of radium: a patient above the age of 45 who has a tumor not larger than a three months' pregnancy, the only symptom of which is profuse menstruation.

We believe that radium is contra-indicated under the following conditions:

**1. Tumors Larger Than a Three Months' Pregnancy:**—Extensive degenerative changes are frequent in larger tumors because of their inadequate blood supply. Irradiation may

further impair their nourishment to such an extent that these changes are accelerated. Large tumors are often complicated by adnexal lesions, the detection of which may be impossible prior to operation. Such tumors frequently so distort the uterine cavity that a complete diagnostic curettage is precluded; under these circumstances an area of corporeal carcinoma may easily escape detection. While regression of myomata commonly occurs following irradiation, the larger tumors, in our experience, do not often completely disappear. The etiologic relationship between myoma and carcinoma of the fundus has not been definitely established but there is evidence to suggest that the presence of myomata may be a factor in the development of endometrial malignancy. In his discussion of fundal carcinoma, Graves stated that fibromyomata were associated with 25.7% of his cases.

For these reasons we believe that surgical removal of larger tumors is the more conservative procedure.

**2. Rapid Increase in Size:**—Rapid enlargement of a tumor is due to some form of degeneration. This may be either benign or malignant, and in both, operation rather than irradiation, is indicated.

**3. Pressure Symptoms:**—Symptoms referable to pressure on the bladder or rectum can be relieved only by removal of the tumor. Regression of the tumor following irradiation is slow and it may be insufficient to relieve the pressure. Under these circumstances operation is preferable.

**4. Tumors Associated with Pelvic Pain:**—Pain in association with a myoma indicates some complication and is usually due to one of the following conditions: chronic adnexitis, degeneration of the tumor, adenomyoma, or endometrial cysts of the ovary. The application of radium may light up a quiescent inflammatory adnexal lesion and should be avoided when the history or pelvic findings suggest its presence. This complication was found in 25.9 per cent of our cases. For previously stated reasons, degenerating tumors should not be subjected to irradiation. In our experience adenomyomata do not respond satisfactorily to irradiation; this is confirmed by Kelly and Burnham who state that in the treatment of such tumors "radium is of no avail." Again pain may be due to an associated endometrial cyst of the ovary, the treatment of which usually falls in the domain of surgery. While it may be impossible to de-

termine the exact cause of pain prior to laparotomy, the conditions revealed at operation will practically always justify the choice of surgical treatment.

5. *Pedunculated Tumors, Both Subperitoneal and Submucous*:—Radium is useless in the treatment of pedunculated subperitoneal tumors. In the submucous type necrosis may occur or irregular bleeding may continue.

6. *Profound Anemia*:—Radium should not be used in the presence of a severe anemia. Such patients react poorly to it, and their lowered resistance increases the possibility of necrosis and infection of the tumor.

7. *Uncertain Diagnosis*:—The primo requisite for successful irradiation is accuracy of diagnosis. If examination under anesthesia does not reveal the exact nature of the pelvic pathology, operation is the preferable procedure.

8. *Stenosis or Blockage of the Cervical Canal*:—Radium should be applied to the body of the uterus well above the internal os; otherwise it may lead to partial or complete stenosis resulting in pyometra or hematometra.

9. *The Presence of Marked Secondary Anemia in Association with Tumors Not Giving Rise to Sufficient Uterine Bleeding to Account for the Anemia*:—Several such cases have come under our observation. In each, careful studies failed to demonstrate the cause of the anemia, and at operation extensive necrosis of the tumor was found. Rapid improvement of the anemia following operation warrants the conclusion that the degeneration was responsible for it.

10. *Tumors in Young Women*:—Irradiation in sufficient dosage to cause disappearance of the tumor will be followed by a premature menopause which often is associated with marked nervous manifestations. Patients under the age of 45 should be treated surgically in order that ovarian function may be preserved.

11. *Extremely Nervous Patients*:—The chief objection to radium therapy is the high incidence of severe menopausal symptoms. Such reactions occur more frequently and are of longer duration in the highly nervous woman than in the more phlegmatic type. In such individuals we believe that hysterectomy with conservation of ovarian function is a more conservative procedure than irradiation and will yield better end results.

12. *Previous Pelvic Operation*:—We do not favor the use of radium in patients who have had a previous pelvic operation because of the possibility of serious damage to an adherent loop of intestine. In such cases we prefer operation or roentgen therapy.

13. *Fear of Radium*:—Not infrequently patients have an unwarranted fear of the effects of radium. If we are unsuccessful in convincing the patient that her fear is unfounded, we prefer to operate even though the pelvic condition be ideally suited to irradiation. When radium is used in spite of this fear, many subsequent complaints may unjustly be ascribed to its lasting effects.

By close adherence to these indications and contra-indications we have used radium in only 22.8 per cent of the cases in this series. Reports from our clinic show a steady decrease in the relative number of patients treated by radium. This decline in percentage of irradiation treatment does not mean that we are losing faith in the method, but rather that the contra-indications are being more rigidly observed.

Radium never should be applied without a preliminary diagnostic curettage. By this means valuable information is obtained in regard to the exact location of the tumor, and the possible presence of an associated corporeal carcinoma will not escape detection.

We formerly considered twelve hundred milligram hours of radium the standard dosage for the treatment of myoma. This dosage proved to be excellent in the control of bleeding and in securing regression of the tumor, but it was followed by a rather high percentage of severe menopausal symptoms. During the past five years the dosage has been reduced to 600 to 900 milligram hours. The incidence of severe menopausal symptoms has diminished, bleeding has been controlled and there has been satisfactory reduction in the size of the tumors. Should, however, the smaller dosage be insufficient one safely can resort to roentgen irradiation, since the possibility of fundal carcinoma has been eliminated by the curettage which was performed at the time the radium was applied.

In this series a fifty-milligram capsule of radium element has been used with a filter of 0.5 millimeter of platinum and 2 millimeters of soft rubber tubing. During the past year the platinum filter has been increased to 1 millimeter. With the higher filtration there is practically no local devitalization of the endometrium and the incidence of troublesome post-irradiation leucorrhea has been eliminated. The radium is placed within the body of the uterus well above the internal os and is fixed in place by suture and firm vaginal packing.

The results following radium treatment, in so far as control of bleeding and tumor reduction are concerned, have been satisfactory in 95.9 per cent. Only four patients have required more than one application; radium was used again with excellent results in three of these, and the fourth responded well to roentgen treatment. Subsequent hysterectomy was required in four cases because of per-

sistent bleeding. At operation two of these patients were found to have pedunculated submucous tumors which accounted for their failure to respond to radium. The operative findings in the two remaining cases are not known.

Menopausal symptoms were absent or only mild in 60.8 per cent of patients treated with radium; they were of moderate severity in 22.6 per cent, and were severe in 16.5 per cent.

#### Results of Radium Treatment

No. cases treated with radium .....	109
No. cases followed .....	97
Result excellent in regard to control of bleeding and tumor reduction	93.8%
One treatment required .....	89.7%
Two treatments required .....	4.1%
Bleeding controlled but not stopped	2.1%
Failure (subsequent hysterectomy required) .....	4.1%
Satisfactory results obtained .....	95.9%

#### Menopausal Symptoms

None .....	31.9%
Mild .....	28.8%
Moderate .....	22.7%
Severe .....	16.5%

#### Roentgen Irradiation

Although only thirty-three of our patients were treated by roentgen irradiation, we believe that this form of therapy has a definite place in the treatment of myomata. Patients whom radium is contra-indicated and who, for local or constitutional reasons, are poor operative risks, may be safely and satisfactorily treated with x-ray. This applies particularly to profoundly anemic patients with large tumors, or with smaller tumors complicated by pelvic inflammatory disease. The bleeding in such cases can be controlled by roentgen therapy, appropriate measures can be used to combat the anemia, and if operation is subsequently necessary, it can be performed under more favorable conditions. The majority of patients so treated will not require operation, but there are others in whom unsatisfactory regression of the tumors renders their removal advisable.

Roentgen treatment may be used with comparative safety in tumors associated with adnexitis and is of great value in cases in which operation is contra-indicated because of obesity, cardiovascular disease, pulmonary complications and thyrotoxicosis.

As a general rule, diagnostic curettage should precede roentgen treatment. Occasionally, however, anesthesia in any form is undesirable; in these cases curettage may be omitted with reasonable safety, provided there has been no intermenstrual bleeding suggestive of malignancy.

Since Murphy has shown the high incidence of microcephalic idiocy and other congenital malformations following postconceptional ir-

radiation, it is most important that patients avoid conception in the intervals between roentgen treatments. Preliminary curettage will prevent the unwitting irradiation of an unsuspected early pregnancy.

It has been our plan to use only the amount of irradiation necessary to induce permanent amenorrhea. This has varied from a minimum of 250 r. to a maximum of 540 r. in the ovarian region, the majority of the patients requiring between 300 and 400 r. The factors used were as follows: 200,000 volts, 50 centimeters distance, 0.5 millimeter of copper plus 1 millimeter of aluminum filter, giving a skin dosage of 800 r. over each portal, the number of portals varying with the thickness of the patient. One series of treatment was sufficient in the majority of the cases, although one required three series and another four series before permanent amenorrhea was induced.

Bleeding was satisfactorily controlled in 93.5 per cent of the patients subjected to roentgen irradiation and reduction in size or complete disappearance of the tumor occurred in 86.9 per cent. While the results in these respects were excellent, severe menopausal symptoms occurred in 25 per cent of this group. These symptoms were moderate in 37.5 per cent, mild in 25 per cent, and absent in only 12.5 per cent. This study shows that the menopausal reaction following roentgen treatment is even more severe than after bilateral oophorectomy, and this constitutes a formidable objection to its employment in a larger proportion of cases.

#### Surgical Treatment

The Clark Clinic always has advocated conservatism in the management of uterine myomata, and this applies with particular emphasis to the surgical treatment where conservation of normally functioning organs should be carried out wherever possible.

We are not in favor of vaginal hysterectomy as a routine procedure, although this operation may be ideal in the occasional patient who presents a small tumor with considerable relaxation of the pelvic floor.

Obviously vaginal myomectomy is indicated when a pedunculated tumor projects from the cervical canal. In this series only eight patients (1.6 per cent) were suited to this form of treatment. We have been able to follow the subsequent course in five of these. There has been no recurrence of menorrhagia and no additional tumors have formed.

Abdominal myomectomy is unquestionably the ideal operation in the young woman, in whom it is desirable to maintain procreative as well as menstrual function, but we believe that it is unwise to employ this method unless the preservation of a normally functioning uterus seems assured. Unfortunately in this series only twenty patients were found amenable to myomectomy.

The end results following myomectomy were satisfactory from the standpoint of menstrual

function in 82.3 per cent. One patient required subsequent hysterectomy because of persistent bleeding. In fifteen patients procreative function was preserved and pregnancy has occurred in only one of these.

If hysterectomy is decided upon, two questions at once arise: first, shall the hysterectomy be complete or partial, and second, what shall be the disposition of the ovaries? We realize that the first of these questions is controversial, but we believe that, with few exceptions, supravaginal amputation is the operation of choice. Reports from several clinics indicate that total hysterectomy is not attended by increased mortality or morbidity, but these results do not apply to the operation as performed by the majority of surgeons.

The fact is indisputable that carcinoma of the cervix may develop after a supravaginal hysterectomy, but this is comparatively rare, and we are convinced that the increased mortality and morbidity attendant upon the universal adoption of total hysterectomy would far exceed that incident to subsequent carcinoma of the cervical stump. The incidence of carcinoma can be largely eliminated by cauterization or repair of the diseased cervix as a preliminary step to the supravaginal operation. In a recent review conducted in our clinic extending as far back as 1910, during which time several thousand supravaginal hysterectomies were performed, only three patients are known to have developed carcinoma of the retained cervix. These occurred eleven, twelve, and eighteen years, respectively, after the original operation.

Our clinic always has advocated conservation of ovarian function wherever possible, for, by so doing, distressing menopausal symptoms are avoided in the great majority of cases. Of the patients treated by hysterectomy in this series, one or both ovaries were conserved in 60 per cent. In this group 82.5 per cent had no menopausal symptoms and in only 3.9 per cent were these symptoms severe. On the other hand, severe menopausal symptoms were present in 25 per cent of the cases following bilateral oophorectomy and were absent in only 20.2 per cent of this group.

Ovarian conservation is important also from the standpoint of the preservation of regular menstruation in young women who require a supravaginal hysterectomy. In patients under forty-five years of age we attempt to conserve sufficient endometrium to permit of regular, though lessened, menstruation. Following this plan regular menstruation has occurred after supravaginal hysterectomy in 19 per cent of the patients under 45 years of age; in none of these has the bleeding been profuse; with the exception of two patients in whom the reaction was mild, none of these have developed menopausal symptoms. These results indicate that there may be a reciprocal relationship, possibly hormonal in nature, between the endometrium and the ovary, and

they offer clinical confirmation of the experimental work of Sessums and Murphy. These workers have shown that hysterectomy in the rabbit is followed by inhibitory and degenerative changes in the conserved ovary, and that these changes are limited by the autotransplantation of endometrium.

The end results following hysterectomy were excellent in 96 per cent of the followed cases. In 4 per cent pelvic pain or bladder symptoms persisted after operation.

#### Postoperative Mortality and Morbidity

Irradiation was not attended by morbidity or mortality. Six patients, however, died following operation, giving an operative mortality rate of 1.8 per cent. Convalescence following myomectomy was uneventful in every case.

The hysterectomy group has been subdivided into uncomplicated and complicated cases. In the latter group we have included large intraligamentous tumors and those associated with large ovarian cysts, chronic adnexitis and ovarian endometriosis. The mortality following hysterectomy in these cases was 3.35 per cent, and in the uncomplicated cases the rate was 0.6 per cent.

Pulmonary embolism was the cause of death in four patients, occurring on the fifth, sixth, eleventh, and fourteenth postoperative days, respectively. One patient died of cerebral embolism on the eleventh day following a difficult operation for a large intraligamentous tumor; autopsy proved the remaining death to be due to massive atelectasis of both lower lobes associated with chronic myocarditis.

Morbidity was present in 10.9 per cent of the operative cases. Femoral phlebitis occurred in seven cases, an incidence of 1.2 per cent. Nine patients had sudden onset of pleuritic pain which was thought to be due to small pulmonary emboli. Massive collapse of the lung occurred in three cases. Complete intestinal obstruction developed in two patients, four and seven months, respectively, after hysterectomy. Both recovered after release of adhesive bands.

#### Summary

Five-hundred consecutive cases of myoma uteri are reviewed from the standpoint of treatment and end results. The indications for irradiation and operation are discussed.

Radium was employed in 22.8 per cent, with satisfactory results in 95.9 per cent. There were no deaths following, irradiation.

Röntgen irradiation was used in 7.0 per cent. Bleeding was controlled in 93.5 per cent and tumor reduction was satisfactory in 86.9 per cent.

The high incidence of severe menopausal reactions is the outstanding objection to irradiation therapy, and the administration of menopausal dosages to women under the age of 45 is to be condemned.

Surgical treatment was the method of choice in 70.2 per cent. The operative mortality was

1.8 per cent. The results following hysterectomy were excellent in 96.0 per cent of the followed cases.

#### Conclusion

Irradiation is not to be looked upon as a

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competitor of surgery; each method has its place in the treatment of myomata; the indications for each are sharply defined and the use of one to the exclusion of the other is not to the best interest of the patient.

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## Myopia

(Special Article)

A metropolitan newspaper recently commented upon the fact that too many people wear glasses and left the impression that myopia was not a condition which needed particular care. This statement cannot pass unchallenged for it is at variance with professional knowledge and evidence. Such a pronouncement gives the patient a false sense of security and leads to inaction on the part of those responsible for the health of children.

Myopia is a common condition which is often hereditary and may be present at birth. Several years ago an investigation was made to determine its incidence in the various school age groups. It was found that there was a very definite progressive rise in the number of afflicted patients between primary and high school periods, from high school to college and from college to university. Continuous application to close work seemed to be one of the factors involved in its production.

High degrees of myopia are often hereditary. Both eyes of the patient may be highly myopic or one eye may have practically normal vision. This hereditary factor is well established and those predisposed to the disease should have the benefit of modern medical science to prevent or at least alleviate the ravages of this handicapping ocular malady.

As there are several rather well-defined types of myopia and as the medical adviser of the family is the one to whom the children should be taken for advice and counsel, it is imperative that he should have a working knowledge of the types of myopia so that he can recommend the appropriate treatment, and thus be prepared to offset the possible ill-effects of the newspaper comment.

The first class comprises a large number of children who have difficulty in seeing their black-board lessons. Most of these show a slight but definite yearly increase in the degree of the myopia.

The second class includes those in whom poor distance vision is discovered and found to progress so rapidly that correcting glasses must be changed

every few months. These patients should be kept under the strict surveillance of a competent ophthalmologist. Two groups can be segregated in this class. In the one, progress of myopia is almost completely arrested in early adolescence. In the other more alarming symptoms develop. The patient becomes extremely short-sighted with a tendency often to development of a stretching of the eyeball which causes a tearing of the retina in the macular region, and a permanent impairment in reading vision, or a detachment of the retina. These serious cases are sometimes referred to as malignant myopia and demand the most enlightened form of treatment.

The third class comprises those who in middle or late life find that as a result of a developing near-sightedness they are unable to see in the distance as clearly as formerly but that they can do their near work more easily. This is the result of a change in the lens of the eye which may be the earliest sign of incipient cataract or the first evidence of a constitutional disease, especially diabetes.

Myopia, is then, a real medical problem.

While each patient is an individual and must be so treated, certain hygienic measures tend to delay or check the progress of the disease. Among these are suitable light, proper position of the head, controlled use of the eyes, medical treatment and corrective glasses.

The child must be trained to use his eyes for close work only when sufficient daylight is available or where the artificial illumination is ample. He must further be instructed to hold his head as erect as possible and have the light come over his left shoulder. A near-sighted child should not do close work for more than half an hour at a time.

In the rapidly progressive types of myopia excessive near work should be prohibited. Some ophthalmologists believe that myopia can be held in check by certain drugs such as adrenalin. All eye physicians are agreed that the greatest deterrent to the progress of myopia and the most efficient treatment is the constant use of proper corrective glasses.

Arthur J. Bedell, M.D.

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## EDITORIALS

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### Salutatory

New hands take over the editorial and business direction of THE NEW YORK STATE JOURNAL OF MEDICINE with this issue. The task has been entrusted to us by the Medical Society, and it shall be our sole aim to perform it in such a way as may best serve the interests of the members.

It is a task at once sobering and inspiring. To carry on the work and traditions of the Medical Journal of a Society which has been in existence 125 years, seems almost beyond ordinary human powers; yet at the same time the very prospect of assisting the many thousands of physicians of this Imperial State to interchange their best thought and information for the furtherance of their mission of healing is enough to fire the enthusiasm of anyone fortunate enough to be given such an opportunity.

The new editorial and business management accepts its commission in this high spirit. Whatever is helpful to the best practice of medicine will find a place in its pages. No other branch of science is advancing with more rapid strides than the science of medicine, and it shall be our purpose to keep THE JOURNAL in the very forefront of the best authentic scientific progress.

Not for a moment, either, must it be forgotten that this journal exists primarily and solely for its readers, the members of the Society. If they find it helpful, it will succeed; if not, it will fail. No editor or publisher can make it succeed alone. So we appeal to the rank and file of the membership of the Society to aid us by their advice and friendly co-operation. If you find some feature helpful, tell us about it; if you

find something to criticize, tell us about that, too. Praise and blame are both helpful.

A publisher of a great national magazine once sent its editor to visit the subscribers in the cities and towns, to sit with them by the fireside, to talk intimately with them about the magazine, and to find what they liked or disliked in it. That is what the editor and publisher of THE NEW YORK STATE JOURNAL OF MEDICINE would like to do with its readers. In the rush and hurry of today, that is impossible, but many a good visit can be made by letter, and it is our earnest wish to make the acquaintance, in this way, of the splendid men who are fighting the great battle against disease and death in New York State. If our efforts prove helpful to them in this warfare, it will be a reward beyond anything that mere words can say.

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### Unified Action

The coming session of the Legislature is fraught with manifold possibility of danger to the profession of medicine. We are living in troublesome times; a revolution is going on—thus far peaceably—in the whole world and its effects in this country are even now striking, and the future is clouded by uncertainty.

These are the times of the demagogue and the mob; none know this better than the men and women of the profession. These are the times of the propagandist and the quack in politics; of the nostrum peddler in government; of the panaceaist in sociology; of the opportunist in society; of the great voice attached to the small mind. And the Legislature in the end is moved by voices—which seem to mean votes—in a democracy.

It has been tritely said that government in the modern democracy is carried on by organized minorities; this is just as true today as it was in the Florence of the Renaissance, the Rome of the Caesars, the Athens of Pericles, or the Egypt of the Pharaohs and as it will be in the Utopia of the millennium.

The profession of medicine as a group has been organized—loosely it must be admitted—but it has not been unified, apparently, and never will be until it meets a major emergency which threatens its social effectiveness and its professional ideals; it is merely in the process of "becoming." Its voice is potentially mighty—mightier now than ever before—when it is raised in the true cause of man's welfare and is as one voice. Unfortunately it has not, as yet, one voice. Legislatures listen to one voice; not to a series of cacophonous bleatings. The profession of medicine to develop its full social effectiveness,



which in the end is evidenced by the legislation governing the people, must reconcile whatever differences may exist among its members so that it can speak with one voice; rationally, honestly, faithfully and wisely, and, because of its age long experience, justly, for the whole people.

But to effect its proper social purpose, maintain its own liberty, preserve its own dignity and conserve its own function in the biology of society the profession of medicine must not alone be organized—it must be unified. Only thus may it save the people from baneful social medicine and itself from subjugation.

*James J. Rooney, M.D.*

### Alfred Fabian Hess

Dr. Alfred Fabian Hess was born in 1875 and died suddenly on December 5, 1933, in New York City. He was graduated from Harvard University in 1897 and from the College of Physicians and Surgeons in 1901. Dr. Hess spent two years in post-graduate study in Europe and returned to the United States in 1903 to practice pediatrics and pursue scientific medical investigations. Hence the period of Dr. Hess' active professional career in New York covers thirty years. Within that relatively short span of years he made himself an internationally recognized authority on scientific and clinical aspects of pediatrics and enriched medicine with discoveries the high significance of which is widely and generally recognized. Dr. Hess, therefore, is to be classed with that remarkable group of scientifically endowed clinicians, not as numerous as distinguished, who amid the claims of medical practice yet find opportunity and time for the advancement of knowledge through research.

The name of Dr. Hess is most intimately associated with the fruitful investigation of the deficiency diseases of early childhood, and especially with the elucidation of the nature of rickets and scurvy, and the discovery of ready means for their prevention and alleviation. It is in large part because of Dr. Hess' imaginatively conceived and accurately conducted clinical and experimental studies that our knowledge of these diseases has reached a high degree of perfection, and that measures based on this knowledge give promise of the gradual and permanent suppression of these affections.

We may well turn to Dr. Hess' Harvey Lecture of 1921 in order to discover the thesis which determined the direction of his important and successful studies of the next twelve years, until he was so suddenly and prematurely stricken in the fullness of his remarkable powers. Dr. Hess opens the lecture by stating

that "one of the most novel medical conceptions is that serious diseases or functional disorder may be occasioned by a mere lack of certain constituents of the dietary," adding to the earlier view that tissue damage arises from harmful agents, chemical or biological, introduced from without. The newer concept was already implicit in the results of Eijkman's feeding experiments on fowl with decorticated rice, and Hopkins' tests on animals with chemically purified food constituents. While these observations led to the discovery of the essential part in the dietary played by vitamins, it was Dr. Hess' many and ingenious studies which laid bare the mechanism of the antirachitic agencies and carried the observations derived from experiment on animals to their fruitful application in clinical pediatrics. If from the invaluable investigations made by Dr. Hess we desire to select the one which gave a new direction to scientific medicine, it would be that relating to the effects of ultraviolet light on the production and prevention of rickets, the climax of which was the discovery of ergosterol, obtained from yeast, as the chemical substance which is activated and made biologically potent by radiation. That food stuffs can also be made antirachitic was determined by Dr. Hess, and that both sunlight and the carbon arc lamp are preventively and curatively effective in children was also demonstrated by him.

Dr. Hess enriched medicine by discoveries in other fields, as is indicated by the working out of a protective serum therapy for mumps, and the preparation of a hemostatic tissue extract to which he gave the name of thromboplastin.

The absorption of Dr. Hess in problems of nutritional disorder in his last period arose from the great advances being made in the knowledge of that subject, from the recognition of its increasing importance under the conditions of modern life, and by reason of the essential part which his researches were playing in the elucidation of phenomena still obscure.

*Simon Flexner, M.D.*

### Food and Drugs Act

Some twenty-seven years ago Congress adopted a food and drugs act to protect public health and prevent deception, which was considered a model of its kind and resulted in many benefits. In the intervening years deficiencies and weaknesses gradually became apparent which were enhanced by the more intense advertising and high-pressure salesmanship of our day, and resulted in an increasing defeat of its intended purpose. Also

during this period there developed the almost universal use of new food products, such as ice cream containing sixty percent of air, and cosmetics, which are not included in its scope.

The absolute need for revision of the law has long been recognized, the work on the details by the Food and Drug Administration of the U. S. Department of Agriculture has been under way for several years, and the New Food and Drugs Bill (S. 1944, H.R. 6110) is now ready to be submitted to Congress. It presents all the advantages of the present law, is intended to prevent the modern abuses which have developed since and to eliminate the deficiencies which have become apparent.

While foods and drugs may now bear no false statements or exaggerated claims on their packages, there is no control whatever on the advertising matter describing them in print or on the radio. Even so, in order to now prove only misbranding it must be shown that the manufacturer knows the statements are false, obviously a most difficult thing to do. The new law covers not only the branding but also the advertising in any form, and it is particularly specific in preventing curative claims for drugs by prohibiting statements which directly or by ambiguity claim effect in any of a long list of symptoms and diseases, which includes particularly those for which extravagant claims are now common in current advertising. As cosmetics, including x-ray and radium used for beauty purposes, are at present not controlled by the food and drugs law, irresponsible use and false labeling and advertising are common, and dangerous poisonous preparations are on the market. While local departments of health have controlled the dangerous cosmetic situation in the larger centres, federal restriction is imperative for general safety and is fully provided for in the proposed new law.

Though the present law prevents the addition of poisons to foods, better control is needed to prevent the sale of dangerous foods regardless of what constitutes the hazard. As some foods are susceptible of dangerous contamination by the unsanitary surroundings in which they are packed, the new law demands permits after inspection in the cases in which such danger may exist.

The new law not only prohibits false labeling as before but also requires statement of the whole truth. Foods must carry their common names and drugs the common name of each therapeutic or physiologically active ingredient. The penalties for violation in the new law are much heavier and injunction proceedings are also possible. Formerly the light penalties were often simply considered as license fees by unscrupulous persons.

The public hearings on the proposed new law will doubtless bring about changes in the present draft, but it is to be hoped that the proposed protection of public health will not suffer thereby. The matter should have the earnest attention of the medical profession and all the support it deserves.

*Frederic E. Sondern, M.D.*

## Medical Sensationalism in the Press

The latest victim of medical sensationalism is Dr. James Ewing, the eminent director of the Memorial Hospital in New York City. Dr. Ewing made an address on cancer before the International Cancer Congress in Madrid in October, and in it he remarked that "the idea of discovering a single cure for all cancers is absurd." Imagine his amazement to find on his return home that he had been represented in the newspapers as saying that "the idea of discovering a cure for cancer is absurd." Again, Dr. Ewing pointed out that repeated exposure of the skin to wind and sunlight, if carried to excess, may cause some cancers of the skin or cause chronic changes in the skin of some subjects which will later lead to cancer of the skin. The reporter, of course, had to parade this as an attack on nudism. "The word nudism does not appear in my paper," declares Dr. Ewing, in a public statement of protest.

Other statements in his address were also twisted out of all recognition, with the effect, he declares, that they "seem to have caused so much disturbance to cancer patients and to many physicians that an effort toward correction is demanded. The confusion," he adds, "seems to have arisen from the tendency to make sensational news out of a serious and somewhat technical discussion."

This is one case out of many, and Dr. Ewing's eminence enables him to get his protest published. In other cases, the truth never succeeds in catching up with the error. Every physician will recall seeing medical "news" in the daily press which he knows at once is absurd. The doctor usually smiles wearily and shrugs his shoulders. But, as Dr. Ewing remarks, these false reports unsettle the minds of the public, and fill the hearts of sufferers with doubt and fear. If every piece of medical sensationalism and yellow medical journalism brought a storm of criticism from the doctors of the community, newspaper editors and reporters would write with more care and caution, and, in cases of doubt, would call a physician on the phone and get the right slant on the subject before plunging into some absurdity. The remedy lies in the hands of the doctors. The weary smile and the shrug of the shoulder are not enough. We can fight the devil with fire,

and fight the pen of error with the pen of truth,  
and may the right win!

*William Seaver Woods.*

### Whither Our Hospitals?

The modern hospital as it exists today is an outstanding contribution to social progress. In fact, no aspect in the field of public health represents as much wholesome benefit to the community as the hospital structure in the United States. The voluntary hospitals have participated in the tremendous industrial development of the last thirty years. It would be surprising if hospital development had not paralleled the same evolution as occurred in industry. If in similar degree the hospitals benefited by the tremendous prosperity of America they also today suffer from the depression that affects all lines of business endeavor. The voluntary hospitals have been created and maintained from the philanthropy of public-spirited citizens and with the drying up of such sources of revenue many of the voluntary hospitals have been forced to the expenditure of some of their unrestricted endowments and many of them are frankly insolvent. There is no immediate prospect that the so-called large givers to hospitals will be in a financial condition to assist the hospitals. Rigid economies have been instituted and yet the receipts are insufficient to meet the expenses for maintenance.

It is also apparent that for many years hospital management by and large has been extravagant. The experience of the United Hospital Fund in New York City in regard to hospital and dispensary accounting cost leaves the impression that many hospitals have conducted their finances on an ineffective system and are unable to allocate costs to their many sub-divisions. Of more importance, however, in the hospital situation is the lack of foresight in planning hospital facilities and in exploring possible sources of revenue for their maintenance. It is not necessary that every voluntary hospital have every specialty in the domain of medicine or surgery. By the same token it is not necessary for every hospital to maintain accessory departments which, while useful, are after all luxury services and quite distinct from the main, primary purpose of a hospital. Perhaps the greatest defect of modern hospital policy has been the constant and increasing extension of the dispensary service. The amount of sickness at any given time in any community, barring epidemics, can be calculated upon the known verity of the law of probability so that the sum total of illness at a given time can within reasonable limits be computed.

The spirit that has animated hospital executives

in their desire to extend free dispensary service or a dispensary service at a very minimal admission fee has resulted in a constantly increasing increment of deficit. Many of the voluntary hospitals embrace services that are uselessly repetitive. Many of them have subdivided their services into such a finely spun division of specialism that by no stretch of the imagination can that service be worth the disbursements entailed. Since there should be no profit-making element in hospital management the policy should be to provide an adequate and competent service in keeping with the demands for such service by the worthy poor.

It is rather an irony that hospitals not having to pay for the most expensive item in industry, namely, their technical professional service, are unable to maintain a balanced budget.

The problem before the community is the maintenance of their voluntary hospital system. The maintenance of this hospital system is not primarily the responsibility of the physicians but is the obligation of society. By the same token it is incumbent upon Boards of Trustees of hospitals and the executives to inquire if their particular institution is not carrying an overload of needless expensive services. In the too liberal extension of these services and in the fatal inability to cancel their dispensary services for individuals who can and should pay lies the greatest bankruptcy factor.

It would appear that two essentials must be complied with if the voluntary hospital system is to carry on:

(1) a restriction of the dispensary service along the following lines:

- (a) absolutely free service to the indigent;
- (b) a service charge to be assessed upon certain minimal income groups;
- (c) a charge sufficient to pay for the service those individuals above the basic minimal group;

(2) fair and adequate compensation to physicians working in the dispensary.

Failure of hospital authorities to rationalize income and disbursements or failure to control the type, character and quantity of service rendered will mean further gradations in insolvency, with a possible appeal for income from the tax receipts. If the voluntary hospitals in any way become dependent upon the tax receipts it will imply, and for all practical purposes mean, some supervision by the predominant political party, with a breakdown in the quality and character of the services rendered. A further extension of this political domination would mean the hiring of the attending physician staff on the basis of politics and would fasten upon the community

the principle that one doctor is as good as another, which is false.

The problem of the hospital can be solved, but not by expecting a return of prosperity sufficient to recreate a large group of liberal givers. Greater social benefits can be conferred upon the community if more and better business methods are introduced into hospital management. A hospital may render important, effective and worth while service and yet not engage in luxury service. A hospital may be more effective in its social usefulness by curtailing some of its activities rather than extending them. An exaltation of charges in the hope of a larger revenue may defeat the very thing for which the additional charges were contemplated. An unchecked and unrestrained dispensary service may wreck a hospital that can function more adequately to the community on a less extensive scale.

Medical charity founded on the expectation of liberal benefactors is largely a thing of the past. In the future hospitals will require more effective management, fewer executives, less repetitive services in order that the institution may function to the fullest possible extent for the community. An estimated hospital deficit for the United States for 1933 of seventy million dollars, with the prospect of twenty-five million additional deficit in 1934 as a result of the sales and processing taxes, presents a problem of gigantic proportions for the trustees of hospitals as well as the community.

*Charles Gordon Heyd, M.D.*

### "Doctors Say"

This magic phrase now crops up everywhere, in advertising on the air or on the printed page. It seems to assure us that if we drink the right coffee, tea, chocolate or fountain drink, if we eat the right breakfast food use the right mouth wash, chew the right gum, or eat the right peanuts, then our systems will be filled with vitamins P D S or R S V P, disease will be unknown, and our old age will flourish with a vigor unknown since the days of Methuselah.

Claims as lurid as a summer sunset are cleverly buttered over by the statement that 'doctors say' or 'physicians agree' that this marvelous product will flood the frame with the happy glow of youth. Just who the doctors are who say all this is neatly dodged, but of course the innocent public never notices it.

Medical journals around the country are beginning to discuss this sort of hocus pocus, and it is to be hoped that when people wake up to it, it will be laughed out of court. Probably little real harm is done if people use these products and imagine health is thrilling through their veins,

and it is really a little bouquet for the medical profession, when the mere words, "doctors say," will sell a million dollars' worth of this or that.

It seems that this particular brand of buncombe has gone even further, and has used the names of prominent physicians without their consent. Suppose that Dr. Medicus of the Highbury Medical School publishes a paper in a national medical journal saying that calcium and phosphorus are required in normal metabolism. Promptly, the wily manufacturer comes out with the statement that Our fountain drink fully meets the health requirements in calcium and phosphorus declared necessary by Dr. Medicus. The eminent doctor is aghast, he can protest, he can forbid further use of his name, but the damage is done. The organ of the Iowa State Medical Society publishes a long editorial on this growing abuse. Vigorous protests sent to the manufacturers by physicians everywhere will show them what the doctors say' and will stop this evil.

*William Seater Woods*

### A "Five-Year Program" to Control Tuberculosis

Have we been lulled into a false sense of security by the cheering figures showing the decline in tuberculosis?

It seems that the death rate from pulmonary tuberculosis in the United States has dropped from 187 per 100,000 population to 68 in 25 years and has dropped from 100 to 68 in ten years. In New York State it has dropped from 152.6 to 67, or more than half, in 25 years.

At first glance, that looks as if the battle is nearly won, but the other side of the picture tells a different story. U. S. census figures show nine deaths every hour from tuberculosis. While such a condition prevails it is time for redoubled efforts, rather than any relaxation. The figures given above appear in a striking pamphlet issued by the Tuberculosis Society of the County of Monroe, entitled "A Five Year Program for the Medical Control of Tuberculosis in Rochester and Monroe County."

The pamphlet, packed with information, can be noticed only briefly here, but the kernel of it lies in its statement that 'more recently it has been recognized by physicians and health authorities that the tuberculosis problem lies solely in the early discovery of the disease.' It recommends therefore the survey of large groups such as pupils and teachers in schools and colleges, food handlers, industrial workers and city employees, to discover cases that may be spreading infection. Once a case is found all persons in contact with the victim, in home, school, shop, etc.,

should be examined. Then various methods of treatment are outlined.

The authors of the pamphlet, who modestly remain anonymous, summarize their findings as follows:

If we are to have an Ideal Program, organized medicine must show leadership.

1. With this leadership must go hand in hand, the help and guidance of the Health Bureau.
2. Cases must be uncovered by all the methods and technics at hand. Among the best methods for more rapid and early case-finding are the tuberculin skin test and the chest x-ray.

3. Contacts must be more generally examined and watched.
4. Reporting of diagnosed cases must be rigidly adhered to.
5. Improvements in technic of therapy must be periodically discussed.
6. Rehabilitation, follow-up, and after-care must be more effectively organized.
7. Reliable and necessary information regarding all phases of dealing with the disease must be prepared and distributed to those involved.

*William Seaver Woods.*

### County Meetings Held

Speakers at the annual meeting of the Medical Society of the County of Franklin, Malone, October 30, were Drs. William V. Cone and David W. MacKenzie, Montreal, Que., on "Abscess of Brain—Diagnosis, Pathology and Treatment" and "The Prostate—Its Pathological Aspects and Newer Forms of Treatment," respectively, and Harold H. Berman, Ogdensburg, on "Psychoneurosis."—Dr. Louis C. Kress, Buffalo, gave a paper on "Five Year Cancer Cures" at a meeting of the Dutchess-Putnam Medical Society, November 8, in Poughkeepsie.—A symposium on neurology was presented by three Syracuse physicians before the Medical Society of Jefferson County, Watertown, November 9; Dr. Eugene N. Boudreau discussed pathology, Dr. Wardner D. Ayer, pathology, and Dr. Albert B. Siewers, clinical manifestations.

### Health at Utica

Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended December 9, indicate that the highest mortality (20.2) appeared for Utica and that the rate for the group of cities as a whole was 12. The mortality rate for Utica for the corresponding week of 1932 was 11.7 and the rate for the group of cities, 12.3. The annual rate for the eighty-five cities was 10.9 for the forty-nine weeks of 1933, as against a rate of 11.1 for the corresponding period of last year.

### University News

The University of Buffalo announces competition for its annual award of a gold medal to the author of a paper on an ophthalmologic or allied subject. Details may be obtained by writing to the dean of the medical depart-

ment or to Dr. Harold W. Cowper, 543 Franklin Street, Buffalo, chairman of the committee on award.

### New Clinic for Occupational Disease

New York University and Bellevue Hospital Medical College has opened a special clinic for occupational diseases, with a laboratory equipped for the work. Cases of lead poisoning, silicosis, occupational dermatoses and benzene poisoning have already been handled in the clinic, which meets Wednesday afternoons. Physicians and industrial health workers have been invited to refer cases.

Landlords of apartment houses in San Francisco are offering free medical, surgical and hospital service to tenants who pay their rent in full on the date when due.

An interesting plan is being tried out in a Mormon settlement in Western Canada. The town has about 2,000 people, who have voted to pay the two local doctors \$25 a year for each family, and in return the doctors guarantee complete medical and surgical care, even including major operations. Each physician receives about \$3,750 a year under this plan, beside occasional fees for treating families who do not join. The doctors and townspeople thus are both relieved of worry over unpaid bills. How the scheme would work in a larger community is, of course, another question.

A medical writer in Kansas, disgusted with the medical ballyhoo he hears on his radio, remarks wearily that "the day may come, and soon we hope, when one can sit by his radio and get a genuine and continuous thrill of Wagnerian opera without being interrupted by a radio announcer who tells the audience of the air what it should take to make its bowels move."

# Society News

## New York Physicians' Mutual Aid Association

### Announcement by Treasurer

In my official capacity as Treasurer of the New York Physicians' Mutual Aid Association, I am continually being asked how is the Association faring in these times of depression and what is the financial status of the medical profession in general. Of course, as we operate solely in New York State I am not in a position to know about any other territory. In this state, and I believe in the larger centers of population particularly, the medical profession is not very prosperous. Even those who have patients find very little cash coming in for services rendered. However, for centuries past, in sunshine and rain, in hard times and good, in times of pestilence and disaster, we have stood bravely by doing our duty towards that portion of the public that required our services. Let it be said to the credit of the medical profession that in these times of stress those of us who had and still have a bit, have not forgotten those who may have had once but have nothing now. Here and there among the doctors special funds have come into existence to help care for local needs among medical men, but none of these funds, so far as I know, has answered the roll call of "helping hands" to their fellow-members in distress as has this sixty-five-year-old Association. It is perfectly true that we have confined our relief work to our membership but that membership has always been open to those who wanted to come in when they were eligible—and that membership is still open to eligible non-members. Information may be obtained by writing or telephoning the Association, Atwater 9-4638 at the Academy of Medicine, 2 East 103 Street, New York City, room 552.

Sixty-five years is a long time for an Association to function and keep a clean record. This Association has done so without a break in the aims that its illustrious founders set for it in 1868. It has come through several periods of depression successfully, just as it is doing in this one. It is able to do this, of course, because it has in the past and is now receiving loyal support from its members, and new members are coming in steadily to fill the vacancies caused by death and otherwise. Likewise, with its officers and trustees serving, as always, without pay or other financial gain, office expenses are kept down to an irreducible minimum, without interfering with the proper running of the Association. In fact, the officers and trustees besides paying, just as do other members, fail to charge the Association for outlays made in its behalf by them at various times.

Many men who thought they were members of this Association just for the good work it was doing for others of the profession, have had occasion in the recent past and present to seek loans. Times have changed for many of us and the end is not yet. Therefore, membership in this Association is more valuable today than ever before. Men in the recent past who thought their savings and insurance were a plenty for the future care of their families are very glad that today they have membership certificates in this Association tucked away.

The expense is small, the returns large and you will find yourself in company with the best in the profession of the State of New York.

To our members who might read this article, or even to non-members who feel generous, and who also may have friends who want to give to a worthy cause, I recommend our Benevolence Fund as a most worthy object for contributions, large or small. Loans are made without security, without publicity and, without reason, without interest for the duration of the loan. Of course, loans are restricted to members but our membership is several thousand and any eligible non-member is more than welcome to join in our great work.

To anyone wanting to add to his income, this Association offers an excellent opportunity in the way that does not belittle one's professional standing.

Here's hoping for better times in the near future, not only for the profession, but the public at large. In the meantime, we will be found continuing to do our part in the relief of the indigent sick, proud to be able to minister to their ills, even though without hope of reward, financial or otherwise.

Irving D. Steinhart, M.D., Treasurer.

*Note—It has come to our knowledge, and we have verified the information, that to date, the investments of the Association have been so managed that all dividends have been fully paid to date.—Editor.*

## Civil Works Administration

In the last issue of THE JOURNAL there appeared the Special Rules and Regulations governing skilled work projects for nurses and certain professional personnel engaged in Medical Relief.

Dr. James N. Vander Veer, Chairman of the Contact Committee, draws attention to the fact that since the C.W.A. is now in operation throughout the State, there should be less work on the part of the T.E.R.A. inasmuch as the male population and some of the female population of the State probably will be employed through the C.W.A. (Turn to page 33)

# Officers of County Societies

TOTAL MEMBERSHIP — JANUARY 1, 1934—13,295

County	President	Secretary	Treasurer
Albany	R. A. Lawrence, Albany	H. L. Nelms, Albany	F. E. Vosburgh, Albany
Alleghany	E. S. Webster, Friendship	E. F. Comstock, Wellsville	G. W. Roos, Wellsville
Bronx	M. O. Magid, N. Y. City	I. J. Landsman, N. Y. City	J. A. Keller, N. Y. City
Broome	H. W. Davis, Binghamton	H. D. Watson, Binghamton	C. L. Pope, Binghamton
Cattaraugus	L. J. Atkins, Olean		
Cayuga	R. F. Johnson, Auburn	A. B. Chidester, Auburn	M. K. Willoughby, Auburn
Chautauqua	E. L. Hazeltine, Jamestown	E. Bieber, Dunkirk	F. J. Pfisterer, Dunkirk
Chemung	J. L. Kinner, Elmira	C. S. Dale, Elmira	J. H. Hunt, Elmira
Chenango	E. W. Wilcox, Norwich	W. E. Hartigan, Norwich	W. E. Hartigan, Norwich
Clinton	I. A. Rowilson, Plattsburg	A. S. Schneider, Plattsburg	K. M. Clough, Plattsburg
Columbia	L. Van Hoesen, Hudson	H. C. Galster, Hudson	H. C. Galster, Hudson
Cortland	S. A. Ver Nooy, Cortland	O. E. White, Cortland	B. R. Parsons, Cortland
Delaware	D. R. Davidson, Hancock	W. M. Thomson, Delhi	W. M. Thomson, Delhi
Dutchess	S. E. Appel, Dover Plains	H. P. Carpenter, P'ghkcepsie	H. P. Carpenter, P'ghk'psie
Putnam			
Erie	E. A. Sharp, Buffalo	L. W. Beamis, Buffalo	C. A. Koch, Orchard Park
Essex	R. P. Fiero, Port Henry	L. H. Gaus, Ticonderoga	L. H. Gaus, Ticonderoga
Franklin	J. W. Kissane, Malone	G. F. Zimmerman, Malone	G. F. Zimmerman, Malone
Fulton	F. G. Calder, Johnstown	E. N. Perkins, Gloversville	J. D. Vedder, Johnstown
Genesee	F. R. Hall, Batavia	P. J. Di Natale, Batavia	P. J. Di Natale, Batavia
Greene	L. B. Honeyford, Catskill	W. M. Rapp, Catskill	M. H. Atkinson, Catskill
Herkimer	O. H. Love, Little Falls	W. B. Brooks, Mohawk	A. L. Fagan, Herkimer
Jefferson	W. S. Atkinson, Watertown	C. A. Prudhon, Watertown	W. F. Smith, Watertown
Kings	J. J. Masterson, Brooklyn	J. Steele, Brooklyn	A. Harris, Brooklyn
Lewis	C. H. Vadney, Lyons Falls	F. E. Jones, Beaver Falls	F. E. Jones, Beaver Falls
Livingston	G. E. Murphy, Mt. Morris	G. M. Doolittle, Sonyea	G. M. Doolittle, Sonyea
Madison	B. S. West, Hamilton	G. F. Mills, Oneida	H. G. Germer, Canastota
Monroe	J. P. Henry, Rochester	W. A. MacVay, Rochester	J. J. Rooney, Rochester
Montgomery	G. Houghton, Canajoharie	W. R. Pierce, Amsterdam	S. L. Homrighouse, Amst'm
Nassau	A. C. Martin, Hempstead	H. G. Wahlig, Sea Cliff	H. G. Wahlig, Sea Cliff
New York	T. M. Townsend, N. Y. City	D. S. Dougherty, N. Y. City	G. W. Kosmak, N. Y. City
Niagara	R. H. Sherwood, Niagara Falls	W. R. Scott, Niagara Falls	W. R. Scott, Niagara Falls
Oneida	B. P. Allen, Oriskany	W. Hale, Jr., Utica	H. D. MacFarland, Utica
Onondaga	T. P. Farmer, Syracuse	E. E. Mack, Syracuse	F. W. Rosenberger, Sy'cuse
Ontario	H. M. Smith, Canandaigua	D. A. Eiselene, Shortsville	D. A. Eiselene, Shortsville
Orange	M. R. Bradner, Warwick	E. C. Waterbury, Newburgh	E. C. Waterbury, N'br'gh
Orleans	L. G. Ogden, Holley	J. S. Roach, Medina	J. S. Roach, Medina
Oswego	S. M. Burns, Oswego	J. J. Brennan, Oswego	J. B. Ringland, Oswego
Otsego	J. Greenough, Oneonta	F. J. Atwell, Cooperstown	F. E. Bolt, Worcester
Queens	H. P. Mencken, L. I. City	J. R. Reuling, Jr., Bayside	J. M. Dobbins, L. I. City
Rensselaer	W. W. St. John, Troy	C. J. Handron, Troy	J. F. Russell, Troy
Richmond	A. J. McGowan, New Brighton	P. J. Timpone, Stapleton	E. D. Wisely, Randall M'r
Rockland	S. R. Monteith, Nyack	W. J. Ryan, Pomona	D. Miltimore, Nyack
St. Lawrence	S. W. Close, Gouverneur	S. W. Close, Gouverneur	C. T. Henderson, Gouver'r
Saratoga	E. J. Callahan, Schuylerville	H. L. Loop, Saratoga Springs	W. J. Maby, Mechanicville
Schenectady	A. R. Warner, Schenectady	S. F. MacMillan, Schenectady	F. Mulcare, Schenectady
Schoharie	W. L. Oliver, Cobbeskill	H. L. Odell, Sharon Springs	LeR. Becker, Cobbeskill
Schuylcr	W. H. Ferrier, Watkins Glen	F. C. Ward, Odessa	F. C. Ward, Odessa
Seneca	C. B. Bacon, Waterloo	F. W. Lester, Seneca Falls	F. W. Lester, Seneca Falls
Steuben	J. J. Sanford, Bath	R. J. Shafer, Corning	R. J. Shafer, Corning
Suffolk	L. F. Garben, Islip	E. P. Kolb, Holtsville	G. A. Silliman, Sayville
Sullivan	G. F. Herben, Loomis	L. C. Payne, Liberty	L. C. Payne, Liberty
Tioga	F. A. Carpenter, Waverly	I. N. Peterson, Owego	I. N. Peterson, Owego
Tompkins	N. S. Moore, Ithaca	W. G. Fish, Ithaca	W. G. Fish, Ithaca
Ulster	F. M. Holcombe, Ellenville	F. H. Voss, Kingston	C. B. Van Gaasbeek, K's'n
Warren	N. R. Frasier, Glen Falls	M. Maslon, Glens Falls	P. T. McGreevy, Glen Falls
Washington	D. F. Macarthur, Greenwich	S. J. Banker, Fort Edward	C. A. Prescott, Hud'sn Fl's
Wayne	F. L. Myers, Sodus	J. L. Davis, Newark	J. L. Davis, Newark
Westchester	A. A. Eggston, Mt. Vernon	H. W. Campbell, White Plains	H. Klapper, White Plains
Wyoming	H. S. Martin, Warsaw	L. L. Klostermyer, Warsaw	L. L. Klostermyer, W'saw
Yates	E. C. Foster, Penn Yan	G. C. Hatch, Penn Yan	G. C. Hatch, Penn Yan



# Medicolegal



## An Ungrateful Patient

An excellent example of ingratitude on the part of a patient is found in a case decided during the last few weeks by an Appellate Court of one of the Western States.

A woman about sixty-five, who had suffered trouble from her appendix for nearly forty years, became acutely ill and consulted her physician. A specialist in abdominal surgery was called into consultation and an immediate operation was advised. The patient entered the hospital and all preparations were made for the operation, but just before it was scheduled she suddenly left the hospital against the doctor's advice, in an ambulance.

After several days at home the patient's condition finally became very critical and she agreed to undergo the operation. She was again rushed to the hospital and operated upon without further delay. Her condition before operation was extremely poor. Her appendix had apparently ruptured some time before, and pain was general throughout her entire abdomen which was distended. She showed marked dehydration and was extremely toxic. She was mentally dull. Her lips and fingernails were blue. The doctors felt that the chances to save her life were very slim, and they feared that she would die on the table.

The surgeon who had been consulted previously, operated with the family doctor acting as anesthesiologist. The operation revealed that the appendix had ruptured and peritonitis had set in. Concededly the operation was skillfully and satisfactorily performed. Her condition immediately after the operation was described by her physician as follows:

"When she returned from the surgery her condition was even more critical, owing to the necessary shock of an operative procedure. She returned to her room with cold extremities; blue cyanosed extremities; her heart beats were much more weakened than before; her pulse was very rapid, running from 140 to 150 at the heart, and at the pulse the circulation was so weak the patient would not come through to the pulse, the wrist, and it was possibly only about 30 or 40 beats each minute. The pinched and drawn toxic expression of the face was present, and all the tissues were dehydrated. In other words, she was suffering from the shock of an operation plus the most toxic type of absorption from the appendix that had been ruptured at least eight days."

The doctors were up against the problem of sustaining life, and promptly held a consultation. They concluded that a saline solu-

tion containing 10 percent glucose should be administered. The intravenous method of injection was ruled out, because of the patient's toxic condition. A hypodermoclysis of a 10 percent glucose solution was ordered and given subcutaneously in the patient's thighs by an interne at the hospital. The patient's life was saved and she regained her health, but she underwent a sloughing of tissues at the places where the injections had been made.

About a month later the woman, then appreciative of her indebtedness to the doctors, wrote to the operating surgeon in part as follows:

"Dear Loved Doctor W—I owe my life to your skill. This will remain with me to the end. \* \* \* Affectionately and ever yours with deepest gratitude, N. C. C."

The patient's kindly attitude was short-lived, for sometime later she brought an action to recover damages for the sloughing against the doctors, the interne, a nurse and the hospital. The trial resulted in a dismissal as to all but the surgeon and the family physician, and she recovered a substantial verdict against them.

Upon the trial only one medical witness was produced on behalf of the plaintiff. This physician had practiced medicine for about ten years, but had never performed a single abdominal operation or treated a case comparable to that of the plaintiff. He had examined her some months after she left the hospital, and he testified to the presence of scars and a loss of tissue. He stated in answer to a hypothetical question, that these conditions were caused by "something wrong with your solution." He asserted that 5 percent was the highest safe glucose solution to be used subcutaneously, and that apparently well over 20 percent had been used. He further testified that no benefit could be expected to a person in extreme shock and dehydrated in giving that person more than 5 percent glucose under the skin, and also that there was nothing to prohibit giving such a person glucose in the veins.

The witnesses who testified on behalf of the defendants included certain eminent doctors of many years' experience, and their testimony was unanimously in support of the procedure followed. That the defendants acted in the case in an attempt to use their best judgment for the patient's welfare, seems clear from the following testimony which one of them gave:

"Q. Now, Doctor, at the time that you prescribed the 10 percent solution for the



hypodermoclysis, did you know at that time the possibility that it might cause sores? A. Yes.

"Q. And knowing that it might cause sores, why did you do it? A. We would much rather have a chance of having our patients live than have them die with clear legs.

"Q. In other words, it was a case of saving her life? A. It certainly was.

"Q. And before you actually did it did you take consultation with Dr. W? A. I did.

"Q. And did he share your view? A. He did.

"Q. If the situation had not been so critical, would you have used 10 percent? A. Probably not.

"Q. Probably not. But it was because of the crisis? A. That is right."

For the judgment in favor of the plaintiff an appeal was taken and the higher Court, in deciding that the record required a reversal and judgment in favor of the defendants, handed down an extremely well written opinion. In this opinion the Court said:

"The main question before us is whether the evidence was sufficient to sustain the verdict against the defendant doctors. Appellants contend it was not, and in our opinion this contention must be sustained. \* \* \* There is no evidence showing that the diagnosis made by the attending physicians was not entirely correct. The paramount duty of the doctors under the circumstances was to endeavor to save the life of the patient. There is no evidence to challenge the judgment of the doctors in determining that an injection of a solution containing 10 percent glucose was essential to accomplish that purpose. There is no evidence to show that in the condition in which they found respondent a 10 percent solution could have been injected in the veins without defeating that purpose. In other words it does not appear that respondent's life could have been saved by any method of treatment other than the one prescribed by the defendant doctors. Under these circumstances, it certainly was not malpractice to save the patient's life, even though this was accomplished by the subcutaneous injection of a solution containing a higher percentage of glucose than is ordinarily injected and even though sloughing resulted at the points of injection."

The Court further said:

"We are concerned on this appeal only with a charge of unskillfulness on the part of the appellants in the selection of the method of treatment. It is a matter of common knowledge that such selection is a matter of judgment and opinion upon which the most skillful members of the medical pro-

fession will often honestly differ. It has therefore been stated that 'a physician is required to possess only ordinary skill in his profession, and to use his best judgment in the exercise of that skill, and if he complies with these requirements, he is not liable for the non-success of his treatment.'"

The Court ruled that if the testimony of Dr. H, the plaintiff's expert, could be given any consideration, it still should be considered as insufficient to make out a prima facie case of negligence against the defendants.

The Court said:

"In the opinion of several other medical experts whose testimony stands unimpeached, the method selected by appellants was the recognized and approved method of treatment for such condition. In other words, if Dr. H's opinion may be said to be in conflict with the opinions of the several medical experts called by appellants, the case presented was one showing that the medical experts were at variance in their opinions as to the method of treatment that should have been employed. Under the circumstances, we are of the opinion, that appellants could not be held liable if they acted within 'the reasonable limit of either opinion.' \* \* \* To hold otherwise would mean that the medical profession would be confined in their selection of methods to the use of those methods, if any, which have the universal approval of all the members of the profession and that new or different methods, having the recognition and approval of a minority, including many of the most able practitioners could never be employed without the risk of a charge of malpractice resulting therefrom. The progress of the medical profession should not be obstructed by placing such an unreasonable limitation upon the selection of methods of treatment."

No reasonable person could dissent from the conclusion reached by the Appellate Court. The verdict of the jury, like so many jury verdicts, was a gross injustice, and the Appellate Court clearly did the right thing in correcting the injustice of the jury's verdict.

A specialist in ear, nose and throat work was consulted with respect to the condition of a nineteen-months'-old child. The doctor found the child had diseased tonsils and adenoids and suggested an operation. Under a general anaesthesia the doctor dissected out both tonsils and removed the adenoids with an adenotome. There was very little bleeding and this was controlled by packing. The child was returned from the operating room to bed, and about ten hours afterwards the gauze packing having been first removed from the child's throat, the child was taken to its home.

The next the doctor heard of the case was a few days later, when he was called to the home of the child. He found it to be suffering

from a temperature of 103. He made a careful examination of the throat and failed to find anything to cause the high temperature. Examination at that time showed that there was no gauze or any foreign substance in the throat. The doctor received word that another doctor had been called in and was looking after the child's fever, so did nothing further.

The doctor did not hear anything further in the matter for another month, when the parents brought the child to the doctor's office. Examination showed a swollen gland on the side of the neck and a slight infection of the left ear, so the doctor ordered cold compresses and argyrol dropped into the nostrils. For the ears he ordered a two percent solution of carbolic acid and glycerin.

Three days later the child was again brought to the doctor's office. The swollen gland had improved, but there was still some infection of the ear. Four days later the doctor observed that the child was apparently developing an abscess of the ear and he suggested that the child be brought back so that he might open the ear within forty-eight hours. However, the child was not brought back to this doctor thereafter, and he never saw the child again professionally. He heard indirectly that the abscess burst without operation and the child recovered with no difficulty.

Suit was brought against the doctor by a guardian ad litem who was appointed for the infant, the complaint charging the doctor with having negligently operated on the child and claiming damages as a result thereof. The case came up for trial before a judge sitting without a jury. The claim of the plaintiff was that the doctor had failed to remove a piece of gauze that he had inserted into the child's throat postoperative. The further claim was made that for ten days following the operation the child ran unusually high temperature, and on the tenth day in the presence of witnesses the gauze in question was coughed up. The doctor on the witness stand denied that he had ever left any gauze in, although he admitted that he had used some gauze in the course of the operation all of which he had removed. The judge handed down a decision in favor of the defendant

doctor, exonerating him of the charge of malpractice.

## Burn From Lamp Treatment

A physician who specialized in the treatment of nose, throat, eye and ear cases, in the course of his practice served on the eye and ear clinic of a certain hospital. A girl about twenty years of age came to the clinic for treatment, and the doctor examined her and found that she had enlarged glands on the left side of her throat. He placed her in a chair and adjusted a Kromayer quartz lamp so that the rays were concentrated on said gland. He turned on the electric current and gave instructions to his assistant, who was a practicing physician, to watch the patient and shut off the lamp at the end of ten minutes. The doctor then went to another part of the clinic and treated some other patient.

About twenty minutes later he returned to where he had left the first patient, and found that she was still sitting with the rays of the lamp concentrated on her neck. The doctor immediately shut off the lamp and examined her. He found the skin was somewhat red, denuded at the point of exposure. The patient went home and returned two days later, at which time the doctor found a blister about the size of a pen had developed. He prescribed a certain salve and paste for the condition and told the patient to return for further examination, but he never saw her again professionally.

Sometime later a lawsuit was instituted charging the doctor with negligence in his treatment. The case came to trial before a judge and jury, and the plaintiff testified that she had been subjected to the rays of the lamp for a period of forty-five minutes, with a resultant blister. The defendant, however, and his witnesses were able to convince the court that the damages sustained by the plaintiff were not due to any negligence on the part of the defendant doctor. A motion to dismiss the complaint was granted at the close of all the testimony, the judge not permitting the jury to pass on the issues in the case.

## Civil Works Administration

(Continued from page 29)

Several County Societies have already appointed representatives to pass on lists of physicians submitted to them as applicants for employment in "skilled work projects" as to their professional standing and economic status, in so far as it is related to eligi-

bility for participation in such projects.

The Erie County Society has already taken steps under the Act to provide fifty local physicians with paid work for the indigent by augmenting existing municipal services in the city of Buffalo.



# Books Received



[Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from this column will be made for review, as dictated by their merits, or in the interests of our readers.]

## If I Have Children

By G. Francis Smith, M.R.C.S. 12mo. of 133 pages. New York, Oxford University Press, 1933. Cloth, \$1.75.

## Food, Nutrition and Health

By E. V. McCollum, Ph.D. and J. E. Becker, M.A. Third Edition. 12mo. of 146 pages. Baltimore, E. V. McCollum & J. E. Becker, East End Station [c.1933.] Cloth, \$1.50.

## Surgical Anatomy

By Grant Massie, M.D. Second Edition. Octavo of 458 pages, illustrated. Philadelphia, Lea & Febiger, 1933. Cloth, \$6.00.

## A Study of Rural Public Health Service

For the Committee on Administrative Practice of the American Public Health Association by the Sub-Committee on Rural Health Work. Edited by Allen W. Freeman, M.D. Octavo of 236 pages. New York, The Commonwealth Fund, 1933. Cloth, \$2.50.

## Record-Librarian's Manual

A Guide to Organizing, Classifying and Filing Clinical Records and Medical Literature. By Carl E. Black, M.D. Octavo of 154 pages. St. Paul, Minn., Bruce Publishing Company, 1933. Cloth, \$2.00.

## The 1933 Year Book of Radiology.

Diagnosis, edited by Charles A. Waters, M.D. Therapeutics, edited by Ira I. Kaplan, M.D. Octavo of 804 pages, illustrated. Chicago, The Year Book Publishers. [c.1933.]

## A Text-Book of Medicine

Edited by Russell L. Cecil, M.D. Third Edition. Octavo of 1664 pages. Philadelphia, W. B. Saunders Company, 1933. Cloth, \$9.00.

## Applied Pharmacology

By A. J. Clark, M.D. Fifth Edition. Octavo of 632 pages, illustrated. Philadelphia, P. Blakiston's Son & Co., 1933. Cloth, \$5.00.

## Diet and Dental Health

By Milton T. Hanke. Octavo of 236 pages, illustrated. Chicago, University of Chicago Press, [c.1933.] Cloth, \$4.00.

## Surgical Clinics of North America

Vol. 13, No. 5, October, 1933. (Chicago Number.) Published every other month by the W. B. Saunders Company, Philadelphia and London. Per Clinic Year (6 issues.) Cloth, \$16.00; Paper \$12.00.

## A Manual of Diseases of the Nose, Throat and Ear

By E. B. Gleason, M.D. Seventh Edition. 12mo. of 651 pages, illustrated. Philadelphia, W. B. Saunders Company, 1933. Cloth, \$4.50.

## Starling's Principles of Human Physiology

Sixth Edition, edited by C. Lovatt Evans, D.Sc. Octavo of 1122 pages, illustrated. Phila., Lea & Febiger, 1933. Cloth \$8.75.

## Behind the Doctor

By Logan Clendening, M.D. Octavo of 458 pp. illus. N. Y., A. A. Knopf, 1933. Cloth, \$3.75.

## Pathogenic Microorganisms

A Practical Manual for Students, Physicians and Health Officers. By William Hallock Park, M.D., and Anna Wessels Williams, M.D. Tenth Edition. Octavo of 867 pp. illus. Phila. Lea & Febiger, [c. 1932.] Cloth, \$7.00.

## Infections of the Hand

A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand and Forearm. By Allen B. Kanavel, M.D. Sixth Edition. Octavo of 552 pp. illus. Phila. Lea & Febiger, 1933. Cloth, \$6.

## Industrial Health Service

By Leverett D. Bristol, M.D. 12mo. of 170 pp. Phila., Lea & Febiger, 1933. Cloth, \$2.00.

## Maternal Mortality in New York City

A Study of all Puerperal Deaths, 1930-1932. By the New York Academy of Medicine Committee on Public Health Relations. Ransom S. Hooker, M.D., Director of Study. Octavo of 290 pages. New York, The Commonwealth Fund, 1933. Cloth, \$2.00.

## The Practical Medicine Series

Comprising Eight Volumes on the Year's Progress in Medicine and Surgery. Series 1933. Chicago, The Year Book Publishers [c.1933.] The 1933 Year Book of General Medicine, edited by George F. Dick, M.D., and others. 12mo. of 831 pages, illustrated. Cloth, \$3.00.

## Metabolic Diseases and Their Treatment

By Dr. Erich Grafe. Octavo of 551 pages, illus. Phila., Leo & Febiger, 1933. Cloth, \$6.50.

## The Medical Clinics of North America

Volume 17, No. 3, November, 1933 (Philadelphia Number.) Published every other month by the W. B. Saunders Company, Philadelphia and London. Per Clinic Year (6 issues.) Cloth, \$16.00 net; paper, \$12.00 net.

## International Clinics

A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, etc. Vol. 4, 43rd Series, 1933. Edited by Louis Hamman, M.D. Octavo of 317 pages. Philadelphia, J. B. Lippincott Company, 1933. Cloth, \$3.00.

## Bacteriology for Medical Students and Practitioners

By A. D. Gardner, 16mo. of 276 pp. N. Y., Oxford University Press, 1933. Cloth \$2.25.

## Mayou's Diseases of the Eye

Fourth Edition, revised and largely rewritten by Frederick Ridley, B.Sc., and Arnold Sorsby, M.D. 12mo. of 249 pages, illustrated. N. Y. Oxford Uni. Press, 1933. Cloth, \$2.25.



# Books Reviewed



## The Motion Picture as a Professional Instrument

By William F. Kruse. Quarto of 28 mimeographed pages. Chicago, Bell & Howell Company, [1933].

This is a pamphlet of twenty-seven pages giving an outline of practically every phase of taking medical movies. It will be of special value to the increasing number of physicians who are using the 16 mm. film. It describes many pieces of accessory apparatus and suggests new methods in lighting, focussing, exposures, editing and all other procedures in taking medical movies.

F. OVERTON.

## The Health School on Wheels

By J. Mace Andress, Ph.D., and I. J. Goldberger, M.D. 12mo. of 399 pages, illustrated. New York, Ginn & Company [c. 1933]. Cloth, 76c.

This is one of a series of books prepared by the same authors which deal primarily with health instruction to children. The book follows the general principal of the other books in this series and is well adapted and very interesting.

A book of this type cannot fail to interest not only the younger children, but indeed the older children, as well as the teachers themselves.

Practically all phases of public health are gone into and this book can well be recommended as a project in the classroom where hygiene and kindred subjects are taught.

S. ZWERLING.

## Fetal, Newborn, and Maternal Morbidity and Mortality

Report of the Subcommittee on Factors and Causes of Fetal, Newborn, and Maternal Morbidity and Mortality. Hugo Ehrenfest, M.D., Chairman White House Conference on Child Health and Protection. Octavo of 486 pages, illustrated. New York, D. Appleton-Century Company, Inc., [c. 1933]. Cloth, \$3.00.

This report, prepared by Ehrenfest as chairman of a very representative subcommittee on Factors and Causes of Fetal, Newborn, and Maternal Morbidity and Mortality of the Committee on Prenatal and Maternal Care of the White House Conference on Child Health and Protection, is excellent. Like the volume on Obstetric Education it should be carefully read by every obstetrician. Though it perhaps contains nothing new; much information has been gathered together in one place. The material is well arranged and presented for the purpose of stimulating interest in an important problem. If every man doing obstetrics should read it, the problem would be solved.

CHARLES A. GORDON.

## Chronic Illness in New York City

By Mary C. Jarrett. In two volumes. Octavo of 545 pages. New York. Published for The Welfare Council of New York City by the Columbia University Press, 1933. Cloth, \$5.00.

This study of chronic illness in New York City "was intended primarily to open up the subject in such a way that thinking, both for immediate planning and for further study of this large question, could be organized around certain central themes." It is one of the studies of the Research Bureau of the Welfare Council and is published for the Welfare Council by the Columbia University Press, in two volumes. A thorough study has been made of chronic illness as presented in New York City in individuals and groups of all ages, and useful suggestions have been made for the prevention of these conditions which make a large number of individuals dependent upon their own relatives, or upon the community. This study, while freely advising the physician concerning the entire care of these individuals, especially after these individuals have discharged themselves from the care of the physician and will not follow medical advice, concerns itself more with the sociological aspect of the problem than with the medical, except in prevention. The question of financial loss to the community, of the family responsibility of these individuals, and the duty of the community in caring for these cripples is presented. The study is thorough, complete, accurate, well written and will repay a careful review of these volumes.

HENRY MONROE MOSES.

## Orthopedic Surgery

By Walter Mercey, M. D. Octavo of 695 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$10.50.

This textbook on Orthopedic Surgery is well put together and well illustrated. X-ray pictures do not predominate and illustrations of pathological specimens and mechanical diagrams are many.

The purpose of the book is to produce a moderate sized textbook that is sufficient for the student and yet not a complete treatise on the subject. The book well fills this purpose and is a valuable addition to the textbooks on this subject.

Dr. Mereer is a general surgeon who specializes in and teaches orthopedic surgery in the Edinburgh University. As a result, the book gives much of the attitude of a general surgeon but is, however, purely orthopedic.

The foreword is by Professor John Fraser who in turn, has a similar background to Dr. Mereer.

JA. C. RUSHMORE.

**Filterable Virus Diseases in Man**

By Joseph Fine, M.D., 12mo. of 144 pages. Baltimore, William Wood & Company, 1932. Cloth, \$2.25.

The author has written an interesting and useful book which gives in a compact way a description and classification of virus diseases, particularly from the pathological and bacteriological standpoint. The references given from the literature bring the subject matter quite up to date, and make the book of value to the student and practitioner of medicine affording, as it does, a résumé, in brief but logical sequence, of the present status of our knowledge of virus diseases, at least as concerns, their causation, transmission and the pathological changes they induce.

JOSEPH C. REGAN.

**The Operative Story of Cleft Palate**

By George M. Dorrance, M.D. Octavo of 564 pages, illustrated. Philadelphia, W. B. Saunders Company, 1933. Cloth, \$6.50.

It is really surprising to see the amount of interesting material that can be embodied in a book of this size.

Apparently no operation, whether sensible or ludicrous has escaped the author's attention. They are all given space with comment on them all.

Complete descriptions of the modernly recognized operations of choice could not very well be undertaken in a work of this size, but in the author's conclusions the reader gets a very good idea of the best features of the recognized procedures. The good and bad features are pointed out with reason for the same.

The author's own operation "The Push Back Operation," as he calls it, is very well described and illustrated and is based on the applied anatomy of the region and physiology of the Palate.

The book is well worth reading. The extensive Bibliography is a work of reference in itself.

S. H. DECOSTE.

**Gastric Anacidity. Its Relations to Disease**

By Arthur L. Bloomfield, M.D. and W. Scott Pollard, M.D. Octavo of 188 pages. New York, The Macmillan Company, 1933. Cloth, \$2.50.

In this book, the authors have collected all the data widely scattered through the literature on the subject of Gastric Anacidity. The book is replete with the work done on the subject from the days of Beaumont to the present.

These authors have contributed a great deal to our understanding of this important subject and in a concise, interesting manner have presented the question to the profession.

The importance of gastric anacidity has become well recognized in recent years and in this monograph, the authors have given the profession a most practical and useful review.

IRVING GRAY, M.D.

**Outline of the Cranial Nerves**

By John Favill, M.D., 12 mo. of 112 pages, illustrated. Chicago, The University of Chicago Press [c. 1933]. Cloth, \$1.50.

The author has compiled a very admirable compend of 112 pages with several illustrative diagrams. Each of the cranial nerves has been considered under five headings: anatomy, function, tests, pathology and localization. The sections dealing with tests and their significance should be especially interesting and instructive to the novice in neurology. As stated by the author in his foreword, nothing new has been presented but old facts have been collected from many sources and regrouped. This should make a very handy book not only for the undergraduate medical student for whom it was intended, but also for the general practitioner as a quick reference source.

JEFFERSON BROWDER.

**The Thyroid Gland. Its Chemistry and Physiology**

By Charles R. Harington, Ph.D. Octavo of 222 pages, illustrated. New York & London, Oxford University Press, 1933. Cloth, \$4.50.

In this monograph, the author has given us a rather complete survey of the chemistry of the thyroid gland. Beginning with the early, crude notions of thyroid function, he outlines the progress made in the chemistry of the gland with especial reference to the role of iodine and its probable significance in the etiology, physiology and pathology of goitre. The early investigations are passed over quickly. However, beginning with Baumann's discovery of iodothyronin, the author details a complete story of the important discoveries in the chemistry of the thyroid and its various iodine-containing compounds. A large part of the book is concerned with the preparation and chemistry of thyroxine, in which subject the author is an outstanding authority.

With regard to etiology, the author concludes that the fundamental cause of goitre is inadequacy of the supply of iodine to the thyroid. His reasoning appears rather sound and convincing with respect to simple colloid goitre; it seems to us less convincing in the matter of exophthalmic goitre and toxic adenoma.

In addition to rather complete data regarding the purely chemical aspects, there are interesting discussions of the physiology of the thyroid, cretinism, the interrelationship of the thyroid with other endocrine organs, etc. These discussions concern themselves largely with such properties which illuminate or are themselves clarified by chemical relationships.

The work is thoroughly scientific and technical and will appeal more to the biochemist and physiologist than to the practitioner of medicine. The book should be especially helpful to anyone wishing to study the matter of thyroid diseases from an investigative point of view.

ARTHUR GOETSCH.

### To Be or Not to Be A Study of Suicide

By Louis I. Dublin, Ph.D., and Bessie Bunzel, M.A. Octavo of 443 pages, New York, Harrison Smith and Robert Haas, 1933. Cloth, \$3.50.

Why should one seek to kill himself? This is the absorbing and vital question dealt with in this new book by Dublin—"To Be or Not To Be." The many and varied motives leading to such an act are discussed in detail. A few of the conclusions which Dublin has drawn from his extensive investigation are:

1 That the Germans show by far the highest suicidal tendency, the negroes and the Italians, the least.

2 That the United States is not classed among the nations showing the greatest suicidal frequency.

3 That the rural suicide rate is considerably lower than the urban rate.

4 That one will go to great lengths to kill himself in a particular manner offering him the greatest psychic satisfaction, and will equally shun some other, possibly easier, method.

5 That economic depression per se will not lead to suicide.

6 That traditions and customs play distinct roles in controlling the frequency of such an erratic act. The power of the Catholic Church more than of any other religious affiliation is instrumental in curbing suicide.

These and many other facts presented in an authoritative manner make this an outstanding reference book on this subject.

The author concludes with the statement that "there is no simple solution to the suicide problem and no unfailing way to keep a dependent person from killing himself."

EMANUEL KRIMSKY

### Massage and Remedial Exercises in Medical and Surgical Conditions

By Noel M. Tidy. Octavo of 429 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$5.25.

This book is unusual in the field of Massage. It brings under one cover general consideration, varieties, causes, general symptoms, complications and principles of treatment of fractures, dislocations, sprains, diseases of joints and the nervous system, deformities and constitutional diseases.

Its description of fractures and dislocations is decidedly brief but presents a systematic outline to guide the attending surgeon and masseur in such a way that unnecessary trauma or harm might not undo the preliminary treatment of the surgeon. Then, too, it serves as an excellent guide to those doing emergency nursing in hospitals and industrial plants as to how fractures, dislocations and sprains might be correctly immobilized until the attending surgeon institutes his treatment.

Well illustrated plates showing applications of splints and bandages include every type of fracture and dislocation.

A well written chapter on deformities of the spine illustrates correction of faulty posture and gives the necessary exercises for their cure.

This book is well worth an inspection and might serve as a handy reference for the prescribing in after care of all joint and bone conditions.

JOSEPH I. NEVINS

### Modern Aspects of Gastro-Enterology

By M. A. Arzfa, M.R.C.P. (London). Octavo of 374 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$8.25.

In a book profusely and well illustrated, the author has presented his views on modern aspects of Gastro-Enterology in a simple and interesting fashion.

The subject matter is written in the interest of the general practitioner and clinician.

After discussing the lesions of the stomach and intestines including an interesting chapter on the simulation of gastrointestinal diseases, the author concludes his book with a chapter on practical dietetics which makes the book complete in its purpose.

IRVING GRAY

### Collected Papers of the Mayo Clinic and the Mayo Foundation

Edited by Mrs. Maud H. Mellish Wilson and Richard M. Hewitt, M.D. Vol. 24, 1932. Octavo of 1205 pages, illustrated. Philadelphia, W. B. Saunders, 1933. Cloth, \$11.50.

The 1932 Collected Papers of the Mayo Clinic maintain the high excellence of the previous volumes which have been issued during the past two decades. Fine judgment has been used in the selection of the papers which are here reprinted in full, only 99 out of a total of 484 papers written in 1932 are thus presented.

An excellent departure is the omission of bibliographies. It strikes the reviewer that if this were routinely done in the preparation of books which are for the general practitioner, diagnostician and general surgeon, a considerable expense might be avoided in the publication and the value of the book, would not suffer.

About 175 authors have contributed, and the contents are too numerous for even brief mention of outstanding papers. Noteworthy articles are to be found under diseases of the alimentary tract, ductless glands, blood diseases, respiratory diseases, nervous system and radiology.

M. A. RABINOWITZ

### Great Men of Science A History of Scientific Progress

By Philipp Lenard. Translated from the second German edition by Dr. H. Stafford Hatfield. Octavo of 389 pages, illustrated. New York, The Macmillan Company, 1933. Cloth, \$3.00.

Doctor Lenard, a Nobel prize winner and

formerly director of the Radiological Institute at the University of Heidelberg has fathomed the past 2500 years and has unearthed 64 outstanding personalities who have, in his opinion, made the most substantial contributions to scientific progress from the standpoint of physics. Of these, only 16 or 25% are of possible Aryan extraction. This is mentioned not to minimize the accomplishments of the Germans but to emphasize that the truly great man is humble enough to bury his bigotry.

The author has failed to include any of the contemporaries in his consideration for, he feels, they are not as great as the "giants" of the past. While this book is intended for the layman it is hardly conceivable that he will appreciate its true flavor unless he be versed in astronomy and optics and dynamics and other branches of the physical sciences. It will win its immediate appeal to a select group of scientists. Its material, however, should attract a DeKruif to write a more elementary edition for the layman.

EMANUEL KRIMSKY.

#### Migraine. Diagnosis and Treatment

By Ray M. Balyeat, M.D. Octavo of 242 pages, illustrated. J. B. Lippincott Company, [c. 1933]. Cloth, \$3.00.

That the dietary control of migraine is more successful than for any other chronic ailment is the contention of this author. Migraine, we are told is a hereditary, allergic symptom complex closely related to and often associated with asthma, hay fever, and urticaria. Genetic case histories are cited for purposes of illustration.

With certain statements contrary to established opinion many will disagree. The author maintains that migraine does not disappear with advancing age; also, that there are 5,000,000 migraine sufferers in this country. One may question whether he has not also included other forms of headache in his conception of migraine.

In spite of these discrepancies this book has certain commendable features. Its theoretical and clinical dissertations including descriptive case records are presented in scholarly fashion. The chapter on therapy is ambiguous because the author has included about every form of treatment which one might try without evaluating them critically.

It is to be hoped that others will be as successful with diet as Balyeat claims. At any rate, he will inspire optimism in his readers by constantly stressing the importance of allergic investigation.

EMANUEL KRIMSKY.

#### Diseases of the Nervous System

By W. Russell Brain, M.D. Octavo of 899 pages illustrated. New York & London, Oxford University Press, 1933. Cloth, \$8.75.

An amazingly complete textbook of diseases of the nervous system. It is strictly up-to-date.

For this quality alone, it deserves the highest praise. This volume is a gem to possess. To read it, is a pleasure. To review it, is a privilege.

Russell Brain—how appropriate a name for a specialist in nervous diseases—has the rare faculty of making his subject live, imparting feeling to what is commonly a drab portrayal. He possesses a mastery of the English language, and a captivating charm of expression. Throughout there is a definiteness, sureness and clarity of description sharply delineating each clinical picture, avoiding confusion in a manner possible only to one of vast clinical experience and profound knowledge of his subject.

The arrangement of material in any textbook on nervous diseases is always in conformity with the author's pet ideas. Admittedly there is difficulty in knowing exactly where to place some matter into the general scheme of things. In this book however there is a smoothness and orderliness of arrangement because of which one subject seemingly flows freely into the following.

Throughout the basic anatomic and physiologic aspects are given vigorous emphasis, for in no specialty is the thorough understanding of these elementary studies so unquestionably necessary as in diseases of the central nervous system.

The subject matter is discussed under nineteen separate chapter headings with many subdivisions. It is essentially a treatise on organic disease, barely twenty-five pages being devoted to the discussion of the neuroses. The chapter on "Diseases of the Nervous System in Relation to Life Insurance" is a novel and valuable feature. To the insurance examiner it should prove to be indispensable. This chapter is typical of the book as a whole in being brief, clear and practical.

Of special appeal to the reviewer was the very sensible but rarely used method adopted in grouping the references in a body at the end of the book. The references are carefully detailed under each subject.

This volume is of such a high grade of all-round excellence that when future textbooks in this special field are contemplated, this book by Russell Brain should prove to be the recognized standard of measurement.

HAROLD R. MERWARTH.

#### Frontiers of Medicine

By Morris Fishbein, M.D. 12 mo. of 207 pages. Baltimore, Williams & Wilkins Company, 1933. Cloth, \$1.00. (Century of Progress Series).

The "Frontiers of Medicine," from the pen of no less a gentleman than the Editor of the "Journal of the American Medical Association," gives a very entertaining account of some of the great medical geniuses, from the days of pre-historic times to the present day. After a short review of what he styles "In the

Beginning," touching the pre-hippocratic period, the author discusses the period of Hippocrates and Galen, the medieval ages, the revolt against Galen (Paracelsus), the rise of anatomy (Vesalius), the rise of physiology (Harvey), the evolution of clinical medicine (Sydenham), the birth of Bacteriology (Pasteur), and the "introduction of mechanical accessories which have prolonged and extended the human senses and thereby improved greatly man's ability to study and treat disease." Dr. Fishbein then goes into the modern period. He stresses the change which is inevitably taking place in the practice of medicine today, owing to rapid advances in our knowledge of the human body and its functions, the progress in organic chemistry, the wonderful technical apparatus at our disposal and, "last but not least," the growing disposition of the State to take cognizance of the needs and rights of the people in matters pertaining to their health and happiness. The book is a *multum in parvo*, which gives a broad sweep of the great ideals in medicine from the dawn of history to our own times. It can be carried in one's pocket and should be read and re-read. Though brief, one can find much to read "between the lines" for thought and serious action.

J. M. VAN COTT.

#### International Clinics

A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, etc. Vol. 3, 43rd Series, 1933. Edited by Louis Hamman, M.D. Octavo of 316 pages, illustrated, Philadelphia, J. B. Lippincott Company, 1933. Cloth \$3.00.

The noteworthy contributions of this volume are the articles on diseases of the parathyroid gland which include the diagnosis of parathyroid over function by Wilder, hyper-

1. parathyroid underd  
tectomy of the new-  
discusses hypothy-

roidism associated with pituitary disease. Morris lays great stress on the thyroid toxicoses which are masked by normal and subnormal basal metabolic rates.

This volume has an excellent résumé of present day knowledge on infectious mononucleosis (glandular fever). The articles on diabetes by Strouse and spondylolisthesis by Kleinberg are noteworthy.

There is an occasional article which might have been omitted. Greater discrimination in the selection of papers by the editor would prove a distinct advantage to the popularity of these volumes.

M. A. RABINOWITZ.

#### Proceedings of the First International Congress On Mental Hygiene

Vols. 1 & 2. Edited by Frankwood E. Williams, M.D., Octavo of 1643 pages. Illustrated,

New York, The International Committee for Mental Hygiene, Inc., 1933.

The present record of the justly memorable congress in May, 1930, is formidable evidence of how the mental hygiene movement has made the world psychiatric conscious. It would be impossible adequately to review the material without writing one's own history of the development. Let it be said at the outset that Dr. Williams accomplished an admirable work in editing which matches the imposing efforts of the organization.

Together with the proceedings of the other congresses which took place simultaneously in Washington, D. C., these volumes offer a source book of the numerous fields into which psychiatric study has branched in our time. Aside from the purely organization papers, the work is excellently balanced by many authoritative articles from the realms of child guidance, hospital treatment, psychoanalysis, social work, penology, the family, psychology and others. When one adds the fruitful discussions which are appended, one gains a world-wide panorama of the work done in this department of medicine and its sociological environs. There has arisen some criticism of the mental hygiene movement as propaganda, but, in the face of this array of material, there can be little doubt that through its efforts our former concepts of a purely material progress in society have been beneficially altered. We have come upon an era of studying humans and their human relationships and there can be little question that a development in this direction is an adequate and fruitful field for psychiatry, whatever its various subspecialties may eventually call themselves. The psychiatrist as well as the practitioner or layman will find these proceedings an accessible method for orientation in the whole field of psychiatric advance.

SAM PARKER.

#### Senile Cataract

Methods of Operating. Second Edition. By W. A. Fisher, M.D. 12mo. of 267 pages, illustrated. Chicago, Chicago Eye, Ear, Nose and Throat College, [c. 1933].

After a period of ten years the second edition of this little volume comes from the press materially improved. The illustrations, as in the original, are diagrammatic in type, but nevertheless exceptionally clear and understandable. The contributors are of world-wide renown, various chapters being from the pens of Fuchs, Barraquer, Holland, Wright, Van Lint and Nugent. As would be expected from the above names, the intracapsular method of extraction is strongly emphasized. The text is well arranged and the descriptions of technique, etc., are clear. The book deals primarily with operative procedures which have come to be accepted as standards, but there are sections devoted to the management of complications and modifications of technique to meet special requirements.



Altogether the work is quite unique and has a definite place in ophthalmic literature. It could be supplemented by more elaborate chapters on methods of extraction in which the capsule is opened. The chemistry and biological phases of cataract development could be thoroughly discussed, particularly as a great mass of material has lately become available in the literature. The book is not only useful to the student but also to the established practitioner who needs occasionally to review the technique.

JOHN N. EVANS.

### New and Non Official Remedies, 1933

Containing descriptions of articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1933. 12mo. of 498 pages. Chicago, American Medical Association, 1933. Cloth, \$1.50.

The annual editions of this volume contain all that the busy physician needs to know concerning the newer preparations which he is daily importuned by the detail men of the pharmaceutical manufacturers to use. The remedies listed and described here have been examined and found acceptable by the Council on Pharmacy and Chemistry, the deliberative body charged by the American Medical Association with the performance of this service for the practitioner who has not the time or means to make the determinations for himself. Among the new preparations admitted during the past year are: Trichlorethylene-Calco, an inhalation anesthetic proposed especially for use in trigeminal neuralgia; Nostal, an additional barbituric acid compound; Decholin and Decholin Sodium, bile salt preparations for use in functional insufficiency of the liver, the sodium salt being suitable for intravenous use when necessary; Biliposol, Bismo-Cymol, and Iodobismitol, bismuth compounds for use in obtaining the systemic effects of bismuth, especially in syphilis; Triphal, a gold salt proposed for use in the treatment of lupus erythematosus; a number of improved liver preparations for use in the treatment of pernicious anemia; two halibut liver oil preparations of high vitamin A and vitamin D content; and Pentnucleotide, the sodium salts of the pentose nucleotides derived from the ribonucleic acid of yeast, proposed for use in infectious conditions accompanied by a leukopenia or neutropenia.

The book contains general articles, descriptive of the classification under which the various drugs are listed. According to the preface, more or less thorough-going revisions have been made of the articles: Arsenic Compounds; Dyes, Iodin Compounds; Liver and Stomach Preparations; Radium and Radium Salts and Silver Preparations.

### Annual Reprint of the Reports of the Council on Pharmacy and Chemistry

Of the American Medical Association for 1932, with comments which have appeared in the Journal. 12mo. of 104 pages. Chicago, American Medical Assoc. 1933. Cloth, \$1.00.

This volume contains the reports on products considered and rejected by the Council during the past year. Among the reports of special interest are: Amertan, an unoriginal mixture of tannic acid and merthiolate in a water soluble jelly, marketed under a proprietary, uninforming name; Antiopin, a mixture of indefinite composition offered under a nondescriptive, therapeutically suggestive name and marketed in a way that may foster the drug habit; Eubetin, another insulin substitute for oral administration marketed under a proprietary uninforming name with unwarranted claims; Ferro-Copral, a mixture of saccharinated ferric oxide, manganese citrate and copper protocate proposed for use in the treatment of pernicious anemia and marketed under a proprietary name with unwarranted therapeutic claims; Hepatex P.A.F., a liver preparation proposed for intravenous use and marketed under a proprietary and insufficiently descriptive name with no satisfactory evidence of the safety of its recommended intravenous use; Bi-So-Dol, an unscientific "alkalinizing" mixture offered under an uninforming proprietary name with exaggerated and unwarranted claims of therapeutic usefulness; Gan-Aiden, consisting mainly of the well known ethyl amino-benzoate (benzocaine), a preparation of undeclared composition marketed under a noninforming proprietary name; Myodin, Subidin, and Sanguiodin, unscientific preparations of iodine marketed with unwarranted claims and indefinite, incorrect statements of composition, under proprietary uninforming names and Tonikum-Roche (Now Elixir Arslyen Compositum-Roche), a "shot-gun" proprietary "tonic" marketed with misleading therapeutic claims.

Besides the reports on rejected articles, the volume contains "Preliminary" and "Special" reports of exceptional timeliness and value: The preliminary report on Thorotrast, a colloidal thorium dioxide preparation proposed for use in retrograde pyelography and for roentgen visualization of the liver and spleen by intravenous administration, is an excellent example of this class of reports. The articles on Nirvanol and Triethanolamine are also interesting and effective preliminary reports. Among the "special" reports those on Sulpharsphenamine and Mercurochrome are outstanding. Each report definitively clears up the present status of the drug concerned, the former, on the basis of a questionnaire circulated among leading syphilologists, and the latter on the basis of independent bacteriologic investigation, done by consultants of the Council.



## Analysis of 376 Consecutive Oxygen-treated Cases From a Study Made at the Presbyterian Hospital, New York, from 1929 to 1932

by

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Read at the annual meeting of the Medical Society of the State of New York at New York City April 4, 1933

**I**N 1929, we reported 100 cases of pneumonia in an oxygen tent or oxygen chamber treated during the years 1926 to 1928<sup>1</sup>. Most of the cases were on ward care at the Presbyterian Hospital, although a moderate number were patients treated in private practice. In each instance, the patients were generally selected for treatment because a decided turn for the worse had taken place, and consequently comprised examples of severe pneumonia, rather than mild or abortive forms of the disease. The mortality rate of the 100 cases was 45 per cent, which appeared to be a low figure when compared with the usual mortality in this type of clinical material selected. Additional comparison was made with the results of Stadie<sup>2</sup> who reported a mortality of 93 per cent in a group of cyanotic lobar and postinfluenzal bronchopneumonia not treated with oxygen, and with that of Binger<sup>3</sup> who reported a mortality of 56 per cent in a series partly treated with oxygen. By these comparisons the inference was strengthened that effective oxygen therapy favorably modified the course of the disease in some instances. However, the complexity of the factors known to modify pneumonia mortality were too great to permit statistical proof that the mortality rate in severe cyanotic pneumonia was lowered, although individual instances of recovery were suggestive of such a conclusion. The experience of Boothby and Haines<sup>4</sup> and that of Judd<sup>5</sup> and his collaborators in postoperative bronchopneumonia appeared to indicate even more decisively the favorable results of oxygen therapy in pneumonia ac-

curing as a complication of surgical procedures.

The present report concerns 376 consecutive cases treated with oxygen therapy at the Presbyterian Hospital from 1929 to 1932. No patient who received oxygen during this period was excluded, so that the results are those obtained from routine hospital management of a variety of diseases. It should be mentioned that the employment of oxygen therapy was not controlled by a changing interne service but was under the direction of a department that assumed the responsibility for providing 40, 50 or 60 per cent oxygen when it was ordered by the hospital staff. The oxygen apparatus, including every tent, chamber and catheter in use, was inspected one to three times daily by one of the two technicians who were especially trained for this work. Thus, while the clinical material was mostly selected by the hospital staff because of therapeutic indications and only in certain instances for the purpose of research, the provision of effective oxygen therapy was carefully controlled. The importance of this factor cannot easily be overestimated when it is realized how frequently the management of oxygen therapy by internes results in complete failure to test the oxygen concentration the patient is supposed to receive.

The cases have been divided into those treated on the medical and those on the surgical wards, because of the critical difference due to an operation as a factor in the latter group. There were 271 cases treated with oxygen on the medical wards during this period, which have been analyzed in the following tables according to diagnosis, type of therapy employed and duration of treatment. In Table I, it is observed that of 124 cases of pneumonia, including lobar and bronchopneumonia, there were 58 deaths, or 46.7 per cent. This figure is quite similar to the mortality of 45 per cent in the series previously reported<sup>1</sup>.

<sup>1</sup> Barach, A. L. N. Y. State J. Med. (Aug.), 1929

<sup>2</sup> Stadie, W. C. J. Exp. Med. 30: 215, 1919

<sup>3</sup> Binger, C. A. L. N. Y. State J. Med. 25: 953, 1925

<sup>4</sup> Boothby, W. M., and Haines, S. F. J. A. M. A.

90: 372, 1923 and Trans. Assoc. Am. Phys. 42: 287, 1927

<sup>5</sup> Binger, M. W., Judd, E. S., Moore, A. B. and Wilder, R. M. Arch. Surg. 17: 1047, 1923

Table 1.—MORTALITY OF OXYGEN-TREATED CASES ON MEDICAL WARDS

*Including Lobar and Bronchopneumonia*

Diagnosis	Number of cases	Number of deaths	Mortality, per cent	Remarks
Pneumonia .....	124	58	46.7	Includes heart failure due to rheumatic, degenerative or coronary artery disease.
Cardiac insufficiency...	109	67	61.4	Includes acute coronary thrombosis only.
Coronary thrombosis..	11	7	63.6	Includes tuberculosis, asthma, fibrosis of lung, etc.
Miscellaneous .....	27	15	55.5	47 additional cases of medical group had less than 24 hours' treatment.
Total .....	271	150	55.3	

The second group, cardiac insufficiency, comprises patients who showed symptoms of heart failure due to previous rheumatic disease or present rheumatic fever, degenerative forms of heart disease (ordinarily described as chronic myocarditis) and cases of myocardial failure dependent upon coronary arterio-sclerosis. Of the 109 cases treated, there were 67 deaths, or a mortality of 61.4 per cent. In collaboration with Richards<sup>6</sup>, we have made a special study of the effects of oxygen therapy in various forms of congestive heart failure, which has been responsible for the relatively high use of oxygen in this group. A further report<sup>7</sup> is in preparation indicating that marked benefit frequently occurs in patients who have degenerative forms of heart disease whereas those whose heart failure is due to rheumatic damage manifest slight or only temporary improvement. The third group consists of 11 cases of coronary thrombosis, of whom 7 died, giving a mortality of 63.6 per cent. Levy and the author<sup>8</sup> reported instances of acute coronary thrombosis in which oxygen therapy appeared to sustain life until the heart established a mechanism of adapting itself to the abrupt shock and anoxemia caused by the vascular closure. Although the mortality rate indicates that 7 of 11 cases died, the gravity of the results in these cases is well known. In some of the patients who recovered, the influence of oxygen therapy seemed to confirm the previous conclusion of its decisive helpfulness in certain instances.

Additional evidence of the value of effective oxygen therapy in coronary occlusion is found in similar studies by Rizer<sup>9</sup>, Ulrich<sup>10</sup> and Kilgore<sup>11</sup>. The relief of chest pain both in acute thrombosis and sclerosis of the coronary artery by oxygen indicates that it fulfils a functional need. Better results will perhaps be obtained when more cases of acute coronary thrombosis

are treated with continuous administration of 50 to 60 per cent oxygen in a modern tent or a chamber, even in the absence of dyspnea or cyanosis, for the first 4 to 5 days after the onset. In these cases, the oxygen concentration should be gradually lowered to that in the atmosphere over a period of twenty-four hours.

The effects of oxygen therapy in congestive heart failure have also been studied by Hamburger, Katz, and Cohen<sup>12</sup>. Further discussion of the indications and value of its use in chronic cardiac insufficiency will be the subject of the paper already referred to.

The last group of miscellaneous cases does not justify further analysis; it included cases of pulmonary tuberculosis, asthma, fibrosis of the lung, suppurative pleurisy, and other conditions. There were 27 cases, of whom 15 died, a mortality of 55.5 per cent. Of the total of 271 cases there were 150 deaths, or a mortality of 55.3 per cent. The effect of the duration of treatment will be mentioned later in more detail, but it is desirable to indicate at this point that 47 cases of this group had oxygen treatment less than twenty-four hours.

On the surgical wards, there were 42 cases of pneumonia, of whom 22 died, a mortality of 52.3 per cent. This group comprises all cases who were definitely diagnosed as bronchopneumonia. It includes patients who also suffered from sepsis as well as other complications. The second group of miscellaneous conditions includes sepsis, shock, embolism, neoplasm, paralytic ileus, cardiac failure, and any condition for which oxygen was used at some time during the illness. Of 63 cases, 48 died—a mortality of 76.2 per cent. The relatively higher mortality on the surgical service is probably related to the presence of terminal complications other than purely respiratory disturbances. The total mortality of 105 cases treated with oxygen on the surgical wards was 69.5 per cent.

<sup>6</sup> Barach, A. L., and Richards, D. W.: Arch. Int. Med. 48:325, 1931.

<sup>7</sup> Richards, D. W., and Barach, A. L.: To be published.

<sup>8</sup> Levy, R. L., and Barach, A. L.: J. A. M. A. 94:1363, 1930.

<sup>9</sup> Ringer, R. I.: Minn. Med. 12:506, 1929.

<sup>10</sup> Ulrich, H. L.: Minn. Med. 15:513, 1932.

<sup>11</sup> Kilgore, E. S.: J. A. M. A. 100:315, 1932.

<sup>12</sup> Hamburger, W. W., Katz, L. N., and Kohn, D. J.: J. A. M. A. 98:1179, 1932; Katz, L. N., Hamburger, W. W., and Rubinfeld, S. H.: Am. J. Med. Sc. 184:810, 1932; Cohn, D. J., Katz, L. N., Sokin, S., and Hamburger, W. W.: Am. J. Med. Sc. 184:818, 1932.

Table 2.—MORTALITY OF OXYGEN-TREATED CASES ON SURGICAL WARDS  
*Classified According to Diagnosis*

Diagnosis	Number of cases	Number of deaths	Mortality per cent	Remarks
Pneumonia .....	42	22	52.3	Includes postoperative bronchopneumonia with or without complications
Miscellaneous .....	63	48	76.2	Includes deaths from sepsis, shock, embolism, neoplasm, and cardiac failure.
Total .....	105	73	69.5	53 cases of surgical group had less than 24 hours' treatment.

During the period of this study the total number of hospital deaths on the two floors from which the surgical data were obtained was 310. Of these, 73, or 23.5 per cent were treated with oxygen. On the medical wards, there were 668 deaths during this period, of whom 150, or 23.2 per cent were treated with oxygen. In other words, approximately one case out of four that die, either on the medical or surgical wards, receives oxygen treatment. This fact indirectly represents the acknowledged severity of the cases who obtain oxygen therapy. In view of this circumstance, the combined total mortality of the medical and surgical services, 223 deaths of a total of 376 cases, or 59.3 per cent, is not a high figure.\*

In Table 3 the mortality of the oxygen-treated cases on the medical wards has been analyzed according to the duration of treatment. In the previous series of 100 patients, the fatal cases had an average duration of oxygen treatment of 2.5 days, whereas the recovered cases had an average duration of treatment of 6.0 days. In the present report, the cases have been divided into those who had oxygen treatment 1 day or a fraction of a day (from 1 to 24 hours), those who received oxygen treatment 2 to 3 days, and those who were treated 4 days or more. The combined mortality for nasal-catheter, oxygen-tent and oxygen-chamber cases on the medical side who received oxygen treatment for a period of 24 hours or less, was 87.2 per cent; those

treated 2 to 3 days had a mortality of 62.3 per cent; the group treated 4 days or more had a mortality of 39.3 per cent.

The mortality rate of the cases treated one day or less on the surgical wards was 74.4 per cent, those treated 2 to 3 days, 70.0 per cent, and cases treated 4 days or more, 54.5 per cent. If a selection is made of only oxygen-tent and oxygen-chamber cases treated on the medical wards, the contrast is greater. The mortality rate of patients treated one day or a fraction of a day was 92.8 per cent, whereas those treated 4 days or more had a mortality of 30.5 per cent.

These figures are presented for their factual interest rather than with the attempt to prove statistically that long-continued administration of oxygen tends to lower the mortality rate. They confirm an obvious rational assumption that a practice of withholding oxygen therapy until cardiac or respiratory failure is imminent is not apt to produce beneficial results. A report based upon cases that received oxygen less than 24 hours, therefore, could not be used as a criterion of the effectiveness of oxygen therapy. An additional reason for mentioning the lower mortality in the cases treated over a long period of time is found in a certain confusion that exists concerning the possibility of undesirable habituation to high oxygen atmospheres.

In discussion of oxygen therapy, a statement is at times heard that patients may be

Table 3.—MORTALITY OF OXYGEN-TREATED CASES ON MEDICAL WARDS  
*Classified According to Duration of Treatment*

	1 Day or less			2 to 3 Days			4 Days or more		
	Num-ber of cases	Num-ber of deaths	Mortality, per cent	Num-ber of cases	Num-ber of deaths	Mortality per cent	Num-ber of cases	Num-ber of deaths	Mortality per cent
Nasal catheter.....	33	28	84.8	51	31	60.8	101	44	43.5
Oxygen tent.....	9	8	88.8	9	6	66.6	19	7	36.8
Oxygen room.....	5	5	100	9	6	66.6	35	10	28.5
Total .....	47	41	87.2	69	43	62.3	155	61	39.3

\* The total number of deaths on both medical and surgical wards was 978. The total number of patients who received oxygen treatment, including fatal and recovered cases, was 376.

Table 4.—MORTALITY OF OXYGEN-TREATED CASES ON MEDICAL WARDS

*Classified According to Type of Oxygen Therapy*

Type of oxygen therapy	Number of cases	Number of deaths	Mortality, per cent	Remarks
Nasal catheter .....	185	105	56.7	Nasal catheter sole method used.
Oxygen tent .....	37	21	56.7	Includes oxygen tent, plus cases transferred to tent after previous catheter treatment.
Oxygen chamber .....	49	21	42.8	Includes oxygen chamber as sole method, plus cases previously treated with catheter or tent.
Total .....	271	150	55.3	47 cases of medical group had less than 24 hours' treatment.

come used to the inhalation of high percentages of oxygen and subsequently become unable to survive on lower concentrations. To some extent this impression has been founded on results I have published in which symptoms of collapse have taken place when patients who were acutely ill were withdrawn from a high oxygen environment. In these instances, however, the mechanism of the collapse of the patient was dependent, as originally stated, on the fact that the disease process in the lungs had not cleared up or had advanced. When the patient is kept in an oxygen environment until the pathological state responsible for anoxemia has disappeared, he may be taken out of the tent or chamber without risk. This is unqualifiedly true for acute cases, as I have repeatedly withdrawn such patients, who have been in a tent or chamber for two or three weeks, from the inhalation of high mixtures without change in their condition, granted the pathological process had cleared. In cases of chronic anoxemia, such as occurs in chronic cardiac and chronic pulmonary conditions, the problem of therapy is more complicated<sup>13</sup>. The inhalation of 50 per cent oxygen may be necessary for three weeks to three months before compensation is regained. In these instances, a gradual lowering of the oxygen concentration is generally advisable.\*

However, even in the chronic cases, the use of oxygen in no instance renders him less able to continue without oxygen; either he recovers so that he may continue without oxygen or he relapses into the condition present before oxygen was begun. In these cases, a gradual lowering of the oxygen concentration is advisable because the degree of cardiac and pulmonary improvement is more limited than in acute disease in which a normal lung was present previous to the illness.

The type of oxygen therapy employed has

been analyzed in relation to mortality. In Table IV, the mortality of 185 cases treated with the nasal catheter was 56.7 per cent. An identical mortality was present in the cases treated with the oxygen tent. However, the cases grouped under the heading of nasal catheter received oxygen *only* by nasal catheter. When their condition became worse, they were frequently transferred to an oxygen tent. The oxygen-tent group contains, therefore, not only cases treated with the oxygen tent but also those who were previously treated with the catheter and who failed to respond to the catheter. The nasal-catheter mortality in the surgical cases was 67.1 per cent, and the oxygen-tent mortality as high as 84.0 per cent.

The same circumstance, namely, that the patients who did not respond to nasal catheter treatment or those who were getting worse with it, applies to the cases treated in the oxygen room. In addition, this group includes cases that were transferred from the tent to the chamber for the same reason. However, in both the medical and the surgical cases, the mortality of the cases treated in the oxygen chamber was 42.8 per cent, considerably lower than in the other types of treatment. The factors involved in an estimation of the effectiveness and value of the various methods of treatment are too complex to render them susceptible to statistical argument. The results are recorded in percentages merely to complete the study. One is permitted, nevertheless, certain deductions from an inspection of the results as well as from clinical familiarity with the material.

We introduced into the hospital the use of the nasal catheter with a calibrated gage, for the treatment of the milder forms of anoxemia, because it was inexpensive and convenient<sup>14</sup>. Provided that the patient breathes through his nose, the administration of 2 to 4 liters of oxygen per minute results in approximately 30 to 35 per cent oxygen in the inspired air. As will be seen from an inspection of the above tables, the largest percentage of

<sup>13</sup> Barach, A. L., and Richards, D. W.: *Am. Rev. Tub.* 26:241, 1932; Richards, D. W., and Barach, A. L.: *Am. Rev. Tub.* 26:253, 1932

\* A more complete discussion of the management of the cases will appear in a forthcoming paper by Richards and Barach on the use of oxygen in chronic cardiac and pulmonary conditions.

<sup>14</sup> Barach, A. L.: *J. A. M. A.* 93:1550, 1929.

cases were treated with this method. A still larger number of cases were begun on the catheter, which was discontinued because it failed to relieve the anoxic state. In an earlier study<sup>13</sup> the author compared the effectiveness of the catheter with that of the tent and chamber by measuring the increment of the arterial oxygen concentration, and found the catheter to be definitely less effective. The catheter, however, was continued as the routine method largely because of the ease of application and because the tent and the chamber at that time were more difficult to manage than they are at present. The experience which we have had in the past three years indicated that the nasal catheter is frequently inadequate to meet the burden of anoxemia in the severely ill patient, and that, furthermore, much valuable time is often lost in trying the nasal catheter first. Patients have been observed who have used the nasal catheter for several days with persisting cyanosis or tachycardia and who were transferred to the tent or chamber only when more serious symptoms of collapse were impending. To that extent nasal-catheter administration may be at times responsible for plunging the therapeutic use of oxygen back to the state where it was a decade ago, namely, instituting oxygen therapy when the patient is approaching the moribund state.

We have unwittingly collaborated in this unfortunate circumstance by speaking of the nasal administration of oxygen as a method of mild effectiveness. It has, however, a field of usefulness for mild cases, particularly in the absence of a good tent, adequately managed, or a chamber. There is also a clear indication for the use of the nasal catheter in chronic cardiac and pulmonary cases during the transition from the tent or chamber to room air; for these patients a gradual reduction of oxygen concentration may be desired. In the studies of relief of the symptoms of congestive heart failure by Richards and myself,<sup>14</sup> we have rarely not observed a recovery of compensation by the initial use of the catheter, but we have frequently seen the maintenance of improvement as a result of catheter administration following a previous period of treatment in high oxygen.\*

The results mentioned above seem to be in favor of oxygen chamber treatment, for even with the inclusion of the severe cases that did not respond to the catheter or tent, the mortality is noticeably less. The point must be additionally mentioned because it coincides with Boothby's<sup>15</sup> observation that a fall in temperature due to high oxygen inhalation is more constant in the chamber than it is in the tent, even though theoretically the oxygen con-

centration is the same in each. Perhaps the fact that the concentration of oxygen is much more constant in the chamber than in the tent is involved. Feeding and nursing the patient in a tent does produce more variations in oxygen concentration than occur in the chamber, in which the oxygen concentration may be kept relatively constant. There is little doubt in the mind of the author that the chamber treatment is superior both in comfort and effectiveness to any other, but the recent improvements in the oxygen tent make it possible to use it much more frequently and effectively than in the past.

The modern tent should be noiseless, capable of a wide range of ventilation without modifying the oxygen concentration, capacious and so freely supplied with windows as to be light inside. Tents which are not ventilated are worse than useless, for reasons which are sufficiently obvious if the comfort of the patient is considered essential. The tents should be tested for maintenance of 40 to 50 per cent oxygen, as is desired, three times daily by a trained technician, who also should regulate the ventilation flow to correspond with the desired temperature and humidity. The carbon dioxide concentration should be tested routinely. However, in our experience, concentrations greater than 2 per cent carbon dioxide within the tent do not occur except possibly for the briefest time, and in no instance with conceivable harm to the patient, even though soda-lime is not used. (For post-operative treatment of patients with hyperthyroidism, the use of soda-lime is advisable, as Boothby<sup>15</sup> suggests.) An initial inflow of 15 liters per minute for 20 minutes, followed by a continuous inflow of 7 to 8 liters per minute, is the standard procedure in the wards of the hospital, modified as the individual circumstances require. With oxygen and ice, a cost of \$6 per day compares favorably with a cost of \$3 to \$4 per day for nasal-catheter administration. The most important factor in making possible the substitution of the tent for the catheter is that the modern tent can be used on ward patients without the expense of a special night and day nurse, which was necessary with the original tent. For these reasons of a technical nature and because severe anoxemia is not adequately relieved by the nasal catheter, our opinion is that the tent or chamber should be employed without previous recourse to the catheter in severely ill patients wherever it is practicable. Testing the oxygen concentration within the tent is essential, as there is no other way of being certain that the patient is receiving the concentration of oxygen his condition requires. There are times when an oxygen concentration of 60 to 70 per cent is necessary for periods of hours, and other times when 40 per cent is adequate. The determination of the dosage, that is, the oxygen concentration desirable for the particular patient, depends on experience in treating anoxic patients,

\* We have not yet employed insufflation into the oral pharynx with the high flows of 7 to 8 liters per minute recommended by Wineland and Waters. (Arch. of Surgery, 22:67, 1931.)

<sup>13</sup> Barach, A. L.: Arch. Int. Med. 37:186, 1926.

<sup>14</sup> Boothby, W. M.: J. A. M. A. 99:2026, 1932.

and this experience obviously can never be gained when a tent is applied routinely without actual accurate determination of the concentration of oxygen employed.

### Summary

A report is made of 376 consecutive oxygen-treated cases from the medical and surgical wards of the Presbyterian Hospital, New York, for the years 1929 to 1932.

The mortality of the entire series was 59.3 per cent. The mortality for the medical cases was 55.3 per cent, for the surgical cases, 69.5 per cent. The cases were analyzed according to: (1) diagnosis, (2) duration of treatment, and (3) type of method employed. There were 124 cases of pneumonia treated on the medical wards with a mortality of 46.7 per cent. In a previous report of 100 cyanotic pneumonia patients, the mortality rate was 45 per cent. The complexity of the factors involved in pneumonia mortality are such as to prohibit deriving a conclusion on a statistical basis that oxygen therapy lowers the mortality rate in pneumonia, although a comparison of the results in other series, and observation of relief of symptoms in individual patients, are suggestive of such an opinion. That the respiratory function, in respect to the absorption of oxygen, is sustained by effective oxygen therapy in severely anoxic cases of pneumonia seems apparent from the reported clinical and physiological studies of individual patients. Some of these patients ultimately recover. It is from this kind of observation rather than from statistical argument that we have obtained the belief that oxygen therapy has a favorable effect on pneumonia mortality.

The influence of duration of treatment and the type of method employed are discussed in the text. Administration through the nasal catheter, although a method with mild effectiveness under certain conditions, may be responsible for the prevention of adequate oxygen therapy because of its employment in severely ill patients. Patients who might be relieved of anoxemia by the use of 50 to 60 per cent oxygen, or even 70 per cent oxygen for brief periods, in the tent or the chamber, at times progress to the point of collapse under the administration of oxygen through the catheter, and may then be incapable of relief even by the transfer to a higher oxygen environment. The use of the tent or the chamber for many cases now treated by the catheter seems advisable. The careful testing of the actual concentration of oxygen breathed by the patient is *essential* in the employment of the tent or chamber.

The use of oxygen therapy in various forms of cardiac insufficiency is discussed in the text. Studies by Richards and the author have shown that congestive heart failures secondary to degenerative forms of heart disease respond favorably to oxygen therapy, whereas heart failures due to rheumatic etiology show only slight or temporary improvement.

Additional experience by Levy and the author in the treatment of acute coronary thrombosis indicates that the inhalation of 50 to 60 per cent oxygen for the first four or five days may tide the patient over the period of shock and anoxemia induced by the vascular closure. In many cases it is indicated at the onset of the occlusion, even in the absence of cyanosis.

\* To be published.

117 EAST 77TH ST.

## THIS AND THAT

An experiment well worth watching is being tried in California. In the City of San Fernando, in Los Angeles county, the curative clinic, where the indigent sick were treated free by physicians who gave their services gratuitously, has been discontinued, and the indigent patients are now referred to the physicians' offices and treated there. The physician receives a nominal fee from the county of 50c per patient treated, for the use of his personal equipment and office facilities. The new plan is said to be regarded favorably so far both by the physicians and the county authorities. Fewer patients apply for treatment, and the cost to the county is something like \$200 less per month. The plan has been in operation about four or five months.

\* \* \*

Hospital authorities whose institutions have lost money by treating automobile accident victims who have never paid will be interested to learn that in Ohio a new law will make be-

tween \$250,000 and \$300,000 available during the year to reimburse hospitals for expenses incurred in the care of indigent persons injured in automobile accidents. Only hospitals "organized and operated not for profit" will benefit. If the patient later becomes able to pay, the hospital is expected to collect his hospital bill and repay the state fund.

\* \* \*

A medical correspondent reported from Nairobi, East Africa, to the London papers, that the brains of 100 adult natives of Kenya weighed, on an average, 150 grammes less than the European. On reading this item, a waggish English physician wrote in to remark that this amount "represents approximately the disparity in weight between the average for male and female brains of English adults," and he added: "Chivalry forbids further comment." What happened to him after his women patients saw his letter has not been reported.

# Symposium on Hoarseness

HELD AT ANNUAL MEETING OF THE MEDICAL SOCIETY OF  
THE STATE OF NEW YORK IN NEW YORK CITY, APRIL 5, 1933

## Etiology, Symptoms, and Diagnosis of the Inflammatory Type of Hoarseness

by

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*Poughkeepsie*

**H**OARSENESS being a symptom of so many different conditions and not a disease entity, we must first consider its pathological mechanism. In order to produce a clear vocal tone, the vocal cords must (1) approximate, (2) assume the proper tension, and (3) vibrate according to the tone desired. Anything interfering with one or all of these components will alter the clarity of tone of the particular voice and produce what is most commonly called hoarseness.

As to the etiology of the inflammatory type of hoarseness, I believe, we must first consider those which come under the classification of emergency, (1) *diphtheria*, *acute edema* and *Vincent's infection*. I wish to emphasize the importance of Vincent's infection, which can easily be confused clinically with diphtheria, not only in adults but in children. When culturing a patient for Diphtherin, it is a simple procedure to take a smear for Vincent's. In many instances, much time can be saved in treatment and, I believe, lives saved. I know of a number of cases diagnosed clinically as Diphtherin with negative cultures for Klebs Loeffler Bacilli, but smears showed true Vincent's infection and recovery resulted from the administration of Arsenic.

(2) *Chemicals* must also be considered. One case in particular came to my attention recently. A boy eleven years old swallowed a piece of dry ice, CO<sub>2</sub>, and almost immediately he had slight dyspnea and hoarseness. I saw him about one half hour after the incident, at which time he had a slight edema of the epiglottis and moderate edema of the orifice of the esophagus, fortunately it was not severe enough to call for any emergency treatment. I mention this case because dry ice is coming more into general use and we are apt to see more of these conditions particularly in children. The caustics in the Lyes must be mentioned here as chemical causes of hoarseness.

(3) As to the *allergic type*, I will cite the following case. Patient E. C., age 52 years, was vaccinated on July 6, 1932. Two days later noticed a rash over the entire body, which she described as "hives", this rash

remained constant until November 1932 and gradually diminished until January 1933, when it entirely disappeared. On August 4th, 1932, she was awakened with a choking sensation, hoarseness and loss of voice. The hoarseness varying with loss of voice continued for about ten hours. These attacks recurred from weekly to ten day intervals until November 1932 when the attacks occurred about a month apart, the last being January 1st, 1933. I saw her on the morning of August 5th, 1932, the right vocal cord was moderately edematous and showed extravasation of fresh blood. I saw her again after the second attack, at this time the right cord was normal and the left cord showed the same condition present as in the right cord at the previous examination. I assume this to be Allergic. I would be pleased to have any other explanation brought out in the discussion.

Another case, I wish to mention Patient M. C. A., who gives his history as follows: "Age 69 years. Developed Malarial fever in 1898 while serving as assistant surgeon with the United States military forces in Honolulu. The recovery from this was slow and was followed by ENT condition of the nose and Eustachian tubes which caused about 75% deafness in the right ear, and deafness to a lesser extent in the left ear. There was considerable hoarseness which was persistent and at times amounted to almost complete aphonia. For the relief of these conditions I was treated for a number of years by an eminent specialist in New York City. Both middle turbinates were removed and uvula excised. The progress of the deafness was arrested, the hoarseness was partially relieved while under treatment, but returned promptly when treatment was discontinued and the hoarseness continued for more than three decades. During the late years, 1920-1930, a very annoying, persistent, dry, hacking cough was present which was more pronounced at night, and interfered with rest, sleep, and for which the usual treatment was of no, or of little, avail. The hoarseness continued and was greatly aggravated by any effort of sustained speech. My condition was such that I was compelled



to give up practically all social life, and I was greatly handicapped in my professional work, especially when serving as medical witness in the Courts since much of the time it was quite impossible to speak loud enough to be heard by a jury. Having almost completely given up hope of any relief I had given up treatment for several years. The condition, however, grew worse during the winter of 1930-1931. Then I again took up treatment and some of the acute symptoms were promptly relieved. Headaches and the annoying sense of congestion of the sinuses disappeared; soon I noted less fatigue when speaking and less hoarseness. The condition has so far cleared up that I have no cough, the voice is clear and full, and I am able to carry on sustained conversation without fatigue or developing any hoarseness."

I first saw this patient on January 24th, 1931. The ears showed no perforations or discharge. Large cryptic tonsils. Septum quite straight. Anterior end of each middle turbinate had been removed. Turbinates were congested. There was muco-pus in ethmoid and sphenoid areas. Frontals were clear and antra hazy on transillumination. The larynx showed extremely edematous cords, with no loss of approximation or motion but considerable infiltration. The voice was very hoarse and an almost incessant cough was present. Blood Wassermann was negative. Allergic skin tests were negative. Under treatment, the right cord cleared quite promptly but it was almost a year and a half before the left cord entirely cleared. I last saw him on February 28th, 1933, at which time there was no edema

of either cord but a very slight amount of thickening present in each. The nasal condition is almost entirely cleared. I assume this case to be one of sensitivity due to absorption from the chronic ethmoid infection. I will be pleased for any enlightenment on this case.

Time will not permit going into the more common types, such as the Exanthemata, Acute infections, Irritation from post-nasal drainage, Foreign bodies, Injuries, Overstrain of voice, Myogenic and Neurogenic (1) central and (2) peripheral.

Syphilis, Tuberculosis and Neoplasm only require respectful mention as they will be considered in papers following in this symposium.

In the inflammatory type of hoarseness, the approximation of the cords is only slightly interfered with but the tension is very much impaired, varying with the severity of the condition present while the vibration varies directly with the tension.

As hoarseness is in itself only a symptom, and many times the only symptom complained of, it should be taken as the key to a complete investigation in order to arrive at the correct diagnosis.

Diagnosis should be made by direct or indirect inspection of the larynx or both; bacteriology; culture and smear; complete physical examination, including neurological, complete blood count and chemistry, blood and spinal fluid Wassermann, Tuberculin, Esophagoscopy, Bronchoscopy and Biopsy. Any or all should be carried out according to the requirements of the individual case.

103 HOOKER AVE.

## Neurological Aspects of Hoarseness

by

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### Neuroanatomical Considerations

THE motor fibers of the vagus and glossopharyngeal nerves arise from the nucleus ambiguus which lies ventral to the vestibular nucleus and dorsal to the olive. These motor fibers supply the constrictors of the pharynx and the soft palate; the intrinsic muscles of the larynx are supplied by the recurrent laryngeal which leaves the vagus within the chest, winding around the aorta on the left and the subclavian artery on the right.

At the base of the skull the vagus lies dorsal to the ninth nerve, ventral to the eleventh nerve and the jugular vein, and lateral to the hypoglossus. Beyond this point it passes through the ganglion nodosum and then proceeds downward between the internal carotid and the internal jugular vein, lateral to the sympathetic.

### Symptomatology

Disturbances in phonation manifest themselves by either hoarseness or complete loss of voice. The function of the vocal cords may, however, be seriously impaired without leading to changes in the voice. Hence the necessity for laryngoscopic examination. Difficulties in phonation may be the result of inflammatory changes of the mucous membrane or the deeper tissues, or may be due to paralysis of the muscles. The dilatation of the glottis, in inspiration, is accomplished by the crico-arytenoids.

The recurrent laryngeal nerve which supplies the intrinsic muscles of the larynx including the abductors and adductors of the vocal cords, may be damaged within the thorax, the nerve on the left being subject to compression by aortic aneurysm or other mediastinal tumor. Paralysis of this nerve has occurred from the pressure of a dilated

left murmur in cases of mitral stenosis. In such cases, bronchoscopic examination has revealed indentation of the bronchus on the left. In such instances of left recurrent palsy, the left vocal cord is paralyzed, being semi-abducted in the cadaveric position. The cord is immobile in inspiration and phonation. The intact cord attempts to pass over to the diseased side in phonation so that the voice is not entirely lost.

The left recurrent laryngeal is more frequently affected, owing to its longer course. In the early stages, the affected vocal cord lies in the midline because the abductor muscle is always paralyzed first (Semon-Rosenbach law). We find here a phenomenon frequently observed in the pathology of the nervous system, namely, that an injury to a nerve does not necessarily affect all its fibers equally. Semon and Horsley found that after the death of an animal, electrical irritability ceased first in the abductors. Donaldson and Hooper came to similar conclusions. Frankel and Gad found that refrigeration of the nerve first interferes with abductor function. Risien Russell thought that the fibers of the abductors of the larynx form a separate bundle in the recurrent laryngeal. Grabower found a poor nerve supply to the posticus. Onodi demonstrated that in horses, the fiber bundles for respiration and phonation are distinct. Sahli believed that the musculature of the adductors is considerably greater than that of the abductors; hence their greater resistance. Grabower and Kuttner maintained that the Semon-Rosenbach law holds for nucleus as well as peripheral lesions. The adductors are more important in phonation, coughing and straining. With increasing lesion of the nerve, the adductors also suffer and the cord then assumes the cadaveric position.

In the early stages of recurrent lesion, the voice is scarcely altered since the cords will meet in the midline during phonation; but when one vocal cord is completely paralyzed, the voice becomes hoarse or whispering and a strong cough is no longer possible because of the patient's inability to close the glottis and raise the intrabronchial pressure adequately. The involved vocal cord is also immobile in inspiration and only the normal cord goes into abduction.

In cases of aortic aneurysm, the cervical sympathetic may also be paralyzed with the recurrent laryngeal, as its fibers form a ring around the aorta. Lesions of this sympathetic plexus may give rise to a Horner syndrome (myosis, enophthalmos, pseudoptosis).

On the right side, the recurrent laryngeal winds around the subclavian artery. It is therefore less apt to be injured by tumors within the chest. The most common causes of paralysis of the right recurrent laryngeal are cancer of the esophagus, thickening of the pleura over the apex of the right lung and aneurysm of either the innominate or subclavian artery.

Both recurrent laryngeal nerves run upward on either side between the trachea and the esophagus and may be damaged in their course by stab wounds, the pressure of enlarged glands or operations upon the thyroid. Carcinoma of the thyroid is especially prone to implicate the nerve.

Bilateral recurrent paralysis may be produced by tumors of the esophagus and mediastinum, bulbar paralysis, tabes, multiple sclerosis, encephalitis, cerebral syphilis, polynuritis, diphtheria, ptomaine poisoning, influenza and lead poisoning. During the early stages, there may be attacks of laryngeal spasm owing to paralysis of abductors. In deep inspiration, the cords are drawn together causing stridor. There may also be an adductor contracture aggravating the difficulty. In later stages when the adductors are also parietic, breathing is much easier but the voice is gone, the patient is unable to cough. There may be inspiratory stridor due to passive ballooning of the paralyzed cords.

In the first stages, laryngoscopic examination shows that the cords, on phonation, are close to the midline due to paralysis of the posterior crico-arytenoids. In the later stages, the cords are in the cadaveric position, midway between phonation and quiet inspiration and there is the risk of inhalation pneumonia.

The treatment includes that of the underlying general condition and avoidance of exercise. The prognosis in bilateral abductor paralysis is very grave. If acute dyspnea occurs, tracheotomy must be done to save life. This phenomenon may occur in tabes, general paresis, lead poisoning and diphtheria.

Lesions at the base of the skull (earies or malignancy) may give rise to typical syndromes. The syndrome of Vernet includes nasal regurgitation of fluids due to paralysis of the palate, dysphagia of solids due to paralysis of the pharynx, and hoarseness due to paralysis of the larynx. The syndrome of the retroparotid space includes, in addition to the above, atrophy and weakness of the sternomastoid and upper part of trapezius, atrophy and fibrillation of half of the tongue, and the syndrome of Horner (due to implication of the cervical sympathetic). We recall an instance of primary carcinoma of the tonsil on the left which was followed by the syndrome of the retroparotid space. In this case, in addition to the laryngeal palsy, there was unilateral paralysis of the palate, nasal voice, and occasional regurgitation of liquids. On inspiration, the palate hung lower on the affected side; on phonation, the raphe was drawn over to the sound side (phenomène de Rideau) and the arch of the palate was higher on the sound side.

The ninth, tenth and eleventh are usually injured together in lesions near the jugular foramen. These may be due to extradural abscess or basilar meningitis of luetic or other origin.

Lesions in the brain stem, such as bulbar

palsy, amyotrophic lateral sclerosis, multiple sclerosis, tabes, tumors of the pons and medulla, aneurysm of the basilar or vertebral artery and occlusion of the posterior inferior cerebellar artery may also lead to paralysis of the recurrens. The symptoms of occlusion of the posterior inferior cerebellar artery are rather characteristic. They include homolateral ataxia, homolateral anesthesia of the fifth nerve with loss of the corneal reflex, disturbances in pain and temperature sense on the opposite side of the body, paralysis of the homolateral vocal cord and palate, and usually, a Horner syndrome. At times one finds only implication of the fifth nerve and a laryngeal palsy. The syndrome of Avellis includes paralysis of the vocal cord and palate on one side and loss of pain and temperature sense on the opposite side of the body. The syndrome of Tapia, which occasionally follows injury, includes paralysis of the tongue and vocal cord on the side of the lesion.

Functional aphonia is most frequently met with in young women. It is usually associated with some emotional trauma. There is almost always a background of neurasthenia or psychasthenia.

The symptoms usually come on suddenly after extreme shock. The patient finds the voice gone or reduced to a whisper. There is no cough. Frequently one elicits a history of previous episodes of aphonia which passed off. In such instances, examination of the larynx shows that the cords are either not adducted at all or approach toward the midline, but the glottis is never completely closed. On coughing, the cords come close together so that the cough is not hollow or bulbar and during respiration, the movements are quite normal. The diagnosis is made on the history, the sudden onset and the absence of other causes for aphonia. The fact, too, that the act of coughing is not interfered with is significant. The absence of abductor paresis also indicates the functional nature of the syndrome. In the majority of cases the symptom complex disappears spontaneously.

Since the voice is intimately related with our affective life, hysterical aphonia is one of the commonest forms of functional paralysis. The aphonia is usually absolute. There may be an accompanying anesthesia of the pharynx. One of Oppenheim's cases of hysterical aphonia, when the moon came into her room, suddenly began to declaim a poem by Goethe; by the time she reached the third line of the poem, she lost her voice again. These hysterical aphonias are apt to recur.

Hysterical aphonia may also be the result of suggestion. I recall a private in whom aphonia developed as a result of a command of a superior officer to "shut up."

The treatment consists of psychotherapeutic suggestion and mental catharsis. In the early cases of hysterical aphonia, the simple passage of a laryngeal mirror or a sound may restore the voice. At times, faradic electricity

and respiratory gymnastics have also proved effective. In one stubborn case cited by Oppenheim, the voice returned in a patient as a result of a small incision made in the arm without induction of anesthesia. The patient fainted and when she came to, her voice had returned.

Occasionally we find disturbances in phonation in lesions of the precentral gyrus. There is a center for the adductors in the motor cortex and probably also one for the abductors. The presence of the former is suggested by the cry of the epileptic and the subsequent cyanosis due to spasm of the glottis. The existence of such a center is also borne out by the experimental induction of barking which I was able to accomplish in the dog through stimulation of the cortex low down in the motor zone. I have recently observed a case of pseudobulbar palsy on the basis of multiple vascular lesions in a chronic cardiac. This patient presented the emotional instability characteristic of this syndrome together with anarthria and impairment of the function of the adductors.

#### Diagnostic Considerations

In all progressive organic lesions of the centers and trunks of the motor laryngeal nerves, the fibers supplying the abductors of the vocal cords become involved much earlier than the adductors.

When the paralysis is confined to the adductors of the vocal cords, it is almost invariably bilateral and is due to functional disturbances in the central nervous system. The organic lesions produce either respiratory difficulty alone, or both respiratory and phonatory difficulties. A partial paralysis of phonation has been observed in multiple sclerosis and bulbar paralysis. Lead poisoning has been known to produce paralysis of the abductors as well as unilateral complete recurrens palsy.

In progressive bulbar palsy, phonation and respiration are found disturbed. In the later stages of the disease, the voice becomes monotonous and feeble. Hoarseness may supervene and go on to complete aphonia. The cough is weak and hollow. Laryngoscopic examination in the beginning of bulbar palsies may show relatively little. Later on we find paresis of the adductors, with insufficient closure of the vocal cords so that phonation is difficult. There are also other signs.

Tumors at the base of the skull or enlarged glands at the jugular fossa may damage the vagoglossopharyngeal nerves, producing unilateral paralysis of the palate and the vocal cord; lesions of the recurrent laryngeal will affect the vocal cord alone. If, therefore, paralysis of the palate accompanies paralysis of the vocal cord, it is useless to look for the lesion within the thorax. The source of the difficulty must be searched for at the base of the skull or in the brain stem.

1192 PARK AVE.

## Indications for Thyrotomy and Laryngectomy in Carcinoma of the Larynx

by  
**CHARLES J. IMPERATORI, M.D.**

New York City

IT was in 1833, (1) just one hundred years ago, that Broders devised the operation of laryngofissure, or now generally known as thyrotomy, for the removal of polyp from the larynx.

In 1844, (1) Ehrmann removed a carcinoma of the larynx by this method and eleven years later, Gordon Buck (1) of New York, reported a successful operative result. His patient lived ten months after the operation.

Following this, there appeared in the literature, the results of about two hundred operations done by this method. Most of these patients died within two years following the operation, and in 1881, Cerny (1) and Yontis inferred that these operators should have removed the larynx in its entirety in order to obtain a cure.

The operation for the total removal of the larynx was first done in Edinburgh by Watson (2) in 1866.

Bilroth (3), assisted by Cerny, performed the first laryngectomy for carcinoma on December 31, 1873.

The operation for total extirpation of the larynx has been done for the past seventy-five years, but with more or less high mortality.

Until recent years, this high operative and postoperative mortality has continued. In 1922 Tapia (4) and McKenty, (5) each reported a series of over one hundred operations, with an operative mortality of 5% and 4%, respectively.

Gluck and Soerensen have operated over one thousand patients, with increasingly good results and lowered operative mortality.

Sir Felix Semon contended that if an early diagnosis could be made, thyrotomy would suffice.

Henry Butlin agreed with Semon and some very good results were obtained. However, it became apparent to Butlin that in order to get no recurrence, the lesion in the larynx must be a small one and a diagnosis of its presence made early. This condition obtains today. There are certain lesions that, even though they are observed and diagnosed early,

more of such malignancy that the mere operation of splitting the larynx, excising the growth and surrounding tissue—"an oasis of carcinoma surrounded by a desert of healthy tissue"—does not suffice for a permanent cure.

Attempts at classification of the growths according to location have helped in determining the type of operation that should be done.

However, what we are most concerned about is whether or not the malignancy of the new growth can be predetermined. It would seem from clinical experience that the classification of Broders of malignant tumors has been of great value in this predetermination. Briefly, this classification is as follows, quoting from A. C. Broders (6) "It is the aim of the microscopist, in the grading of carcinoma and of other malignant neoplasms, to estimate the proportion of cells that are partially or completely differentiated on the one hand, and those that are more or less undifferentiated on the other. The results are expressed in numerals from 1 to 4, as follows. A carcinoma graded 1 is one in which the proportion of differentiated cells ranges from almost 100 down to 75 per cent, that of the undifferentiated cells from practically 0 up to 25 per cent, in a carcinoma graded 2, the proportion of differentiated cells ranges from 75 down to 50 per cent, that of undifferentiated cells from 25 up to 50 per cent, in a carcinoma graded 3, the proportion of differentiated cells ranges from 50 down to 25 per cent, that of the undifferentiated cells from 50 up to 75 per cent, and in a carcinoma graded 4, the proportion of differentiated cells is from 25 per cent to practically 0, that of the undifferentiated cells from 75 up to 100 per cent.

"At this point I should like to state that, as a rule, there is practically the same grade of malignancy throughout a carcinoma."

The function of the larynx is two-fold. Primarily, its function is as a valve placed at the upper part of the respiratory apparatus to prevent foreign substances from entering the airways. Secondly, in the process of evolution, the larynx has become the most important factor in the production of the voice.

Our method of attempted cure of a patient with carcinoma of the larynx must be so adjusted that consideration is given primarily to a permanent cure and secondarily to the conservation of function—that is the voice. Also, the results obtained by certain methods

\*A. C. Broders. Practical Points on the Microscopic Grading of Carcinoma. N. Y. State Journal of Medicine June 1, 1932

<sup>1</sup> Cancer of the Larynx Monograph John E. Mac Kenty Page 5  
<sup>2</sup> Ibid. Page 11  
<sup>3</sup> Bilroth Archives fur Klin Chirurgie Band XVII Heft 11 Page 343  
<sup>4</sup> Tapia 10th International Otolog Congress, 1922 Tome I, Pg 160  
<sup>5</sup> MacKenty, J. E. N. Y. State Journal of Medicine October, 1922

must guide us in whether or not our procedure shall be conservative or radical.

Fielding Lewis (7) considers lesions located on the anterior part of the cord, as 80% curable when operated upon by laryngofissure.

St. Clair Thompson (8) considers that 76% of cures can be obtained by this method.

Tucker (9) has reported 92% of cures by laryngofissure, but in this report several of the patients had been operated upon within one year. However, most of them had been operated upon three years and many over four and five years previously.

Clerf and Crawford (10) are of the opinion that the cell type of a tumor should be considered in conjunction with the age of the patient, the location and extent of the lesion and the duration of the disease in determining the form of treatment to be carried out.

New and Fletcher (11) conclude that the selection of patients with carcinoma of the larynx for a conservative or radical operation should be based on the special type of lesion, in addition to the usual consideration.

### Diagnosis

Hoarseness and the observation of a new growth on the vocal cord, should lead to the establishment of a diagnosis that will either prove or disprove of a cancerous lesion. The age of the patient, sex, habits as to tobacco and alcohol are to be considered. To quote from Butlin, "There are three classes of cases: first, in which anyone and everyone can make a diagnosis; second, in which the better instructed or more experienced can make, and the other do not; and the third class in which the conditions are so obscure that no one can make a diagnosis unless the larynx is open and in some of which it is even then difficult to be sure of the nature of the disease."

Sir Felix Semon (12) says: "Out of thirty-three patients on whom thyrotomy was performed for presumably intrinsic malignant growths, in eight, the diagnosis was either found to have been at fault or remained doubtful."

The patient must be properly x-rayed to exclude tuberculous infection, "his temperature, weight, physical signs, fatigue, blood and sputum, should be investigated." "Tubercu-

losis may develop in the larynx, and particularly in elderly and vigorous men, without any tubercle bacilli in the sputum and with quiescent or negative chest symptoms."

Establishment of the diagnosis must be done by biopsy and if possible the growth typed according to the Broders classification. Indirect examination should always be repeated so that proper observation and study may be given the growth. Direct examination and biopsy should be done, if possible, by the surgeon who will do the major laryngeal surgery—for by the use of the direct laryngeal speculum, he may observe the larynx that by the indirect method he may not have seen so well, either because of sensitiveness on the part of the patient or noncooperation. The ventricles and subglottic space may be inspected and the extent of the growth determined. When the biopsy is done, it is done with the precision of the operator who will later observe the larynx through an anterior opening, and especially if he is doing a thyrotomy.

Classification of growths in the larynx are intrinsic and extrinsic. Thyrotomy and laryngectomy are definitely indicated in intrinsic growths.

Intrinsic growths may be divided in anterior and midcordal growths with comparatively no infiltration of the surrounding tissues. In this type of growth, thyrotomy is indicated and provided the classification of the growth is not a number 3 or 4 of the Broders classification. If it is, it is very likely that a recurrence will take place. In all other growths that are intrinsic, that is, within the larynx, laryngectomy is indicated.

Laryngectomy is indicated and should be performed following a recurrence in one on whom a thyrotomy has been done.

The operation should be confined to growths within the larynx, that are of such a nature because of size, location, degree of malignancy and infiltration of the adjacent tissues, the conservative procedure of laryngofissure would not suffice. The end results will depend mainly on the adherence to these facts. In general it may be accepted that 5% to 8% of these patients operated upon by this method will have a recurrence.

Growths that have extruded themselves outside of the larynx or are postericoidal, occasionally may be helped by a laryngectomy plus type of operation, with a bloc dissection of the tissues of the neck.

Irradiation, following this extensive operation, has given some encouraging results.

### Summary

Establishment of diagnosis must be done by biopsy and, if possible, the growth typed according to Broders' classification.

If the growth is localized to the middle or anterior portion of the cord, and is of type 1

<sup>7</sup> Laryngeal Cancer. F. O. Lewis. Surgery, Gynecology and Obstetrics, Feb. 15, 1933. Page 466.

<sup>8</sup> Cancer of the Larynx. St. Clair Thompson. Macmillan Co., 1930. Page 128.

<sup>9</sup> Early Intrinsic Cancer of the Larynx, Diagnosis and Treatment. Gabriel Tucker. Annals of Otolaryngology and Laryngology. March, 1932. Page 36.

<sup>10</sup> Carcinoma of the Larynx. Louis H. Clerf and Baxter L. Crawford. Archives of Otolaryngology. November, 1932. Page 676.

<sup>11</sup> The Selection of Treatment for Carcinoma of the Larynx. G. B. New and E. Fletcher. J. A. M. A., November 19, 1932. Page 1754.

<sup>12</sup> Cancer of the Larynx. St. Clair Thompson. Macmillan, 1930. Page 55.

or 2, laryngofissure or thyrotomy should be considered.

A growth of such size that it extends posteriorly or on to the adjacent cord anteriorly, even though it be of the 1 or 2 grading of Broders, indicates the necessity for laryngectomy. Growths in the posterior commissure also demand laryngectomy.

Growths that have extruded themselves outside of the larynx, occasionally can be helped by extensive operating. The lymph nodes are always involved. In these types of cases, laryngectomy accompanied by bloc dissection of the neck and later intensive doses of high voltage x-ray, have given fair results.

The laryngofissure operation performed is after the technique of Chevalier Jackson. The

technique in the laryngectomy operation is that essentially of MacKenty.

### Conclusion

The names of Solis Cohen, Bruas, Chiari, von Bergmann, Kocher, Mikulicz, Schmieglow, Moure, Chevalier Jackson, Mady, Scheier, Wassermann, Sendziak, Hoshine, Crile, Delavann, MacKenty and those others mentioned previously, are in that galaxy of medical stars that have shone so brilliantly in the fight against cancer of the throat. By their labor in these laryngeal problems, they have advanced our knowledge in diagnosis and improved our operative technique to its present status. We, of this present decade, salute them.

108 EAST 38TH ST.

## The Non-surgical Treatment of Aponia (Hoarseness)

by

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**H**OARSENESS is a symptom and not a disease. Therefore, we do not treat it at all, strictly speaking, but we do aim to treat the disability which expresses itself in loss of voice, partial or total as the case may be.

When I began to set down on paper some of the thoughts which came to me in preparing this little contribution to the discussion of hoarseness, I found that it is utterly impossible to consider it apart from diagnosis. Nowhere in medicine is it more important to determine the exact cause of a malady which is not immediately dangerous to life. And yet, hoarseness seems to signify to most physicians, merely laryngitis, nothing more. Moreover, there is too often not even an attempt to examine the larynx, and a wooden spatula held against an obstreperous tongue, under an insufficient light, makes the diagnosis. That is, to be sure, reprehensible, but we must remember that even in expert hands, the laryngeal mirror sometimes fails because of gagging or vomiting, or lack of cooperation of the patient. Personally, I have been at a disadvantage in some cases where a physician has sent a patient for an "expert opinion," and I have been unable to study the larynx with any degree of satisfaction, even after moderate cocaineization. It may be necessary to try at several different sittings before we can determine, with reasonable satisfaction, the various points upon which diagnosis rests.

Very frequently, the patient has had a respiratory infection of a generalized type, a real top-to-bottom affair, in which the larynx has borne much of the brunt of the attack because of violent coughing and the consequent insult to the laryngeal tissues. The sovereign remedy is compound tincture of benzoin, in-

haled from a stenmer, and this certainly helps in the simple infections, nonvirulent types; but there are many other types in which it does little or no good, and may do harm by prolonging the period in which exact diagnosis is not made—even to a fatal outcome.

Here is an actual problem case. . . . A young business woman came down with a general respiratory infection which was diagnosed as "the flu." She lost her voice completely for two weeks, during which time she inhaled steam from benzoin three times a day, and visited her general physician every other day. The condition did not improve, however, and since she was unable to earn the usual honorarium as a church singer on Sundays, she became alarmed lest the voice never return and asked that she be sent to a specialist.

Examination disclosed a general respiratory infection with masses of yellow pus flowing down the postpharyngeal wall. The cords were covered with secretion and were reddened and swollen. There was also a tracheitis, as evidenced by engorged tracheal mucous membrane and secretion which was being constantly coughed up. Immediate attention was paid to the nasal condition. Metaphedrin, aqueous solution, one-half of one per cent ( $\frac{1}{2}\%$ ), was prescribed to be instilled into the nose, five drops every three hours. Irrigations of normal saline three times a day to remove the excessive secretion were ordered, with special instruction as to the danger to the ears and how to avoid it. A cough sedative was given at night in order to insure much needed rest, and the inhalations were continued in order to help rid the lower airways of the profuse discharge. Daily treatments were given in the office which were cleansing and antiseptic

in nature. For the larynx and lower airways, I instilled, with a glass syringe, one c.c. of hexylresorcinol in distilled water (half and half). Strict silence was enjoined, and absolute rest in bed between visits. A specimen of sputum was obtained and sent to a laboratory which reported *Streptococcus hæmolyticus* and *Staphylococcus aureus* from which a culture was prepared for the making of a vaccine. It was my intention to give the vaccine if any complication such as joint or muscular infection supervened. This proved to be unnecessary, however, but in several previous experiences it has been of value in providing us with an additional weapon against this vicious unseen enemy—the *S. hæmolyticus*. On the fourth day, the lady came in with a cheery “good morning.” The voice was not normal to be sure, but it was present, to her great delight. It was two weeks from the beginning of my treatment before she was allowed to sing. During this time, a ferric tonic was given; for it is very important to restore the general physical condition in all of these cases. The best tonic would be a change of air, food, and sun baths out of doors, but this is denied to most patients in these troublesome times.

When considering such an infection, one should keep in mind several possibilities. First, we may be dealing with an early pulmonary tuberculosis—one in which other vicious organisms prepare the soil for Koch's bacillus, and lower the vital resistance so that the implant gets in its deadly work at once. Moreover, there may be a lighting up of an old healed focus in the lung, the presence of which was unknown. Secondly, it has seemed to me that, in certain cases, the cropping out of such illnesses as “rheumatic fever,” gastro-enteritis, or even appendicitis may possibly hark back to the respiratory infection of some weeks or months before. In one instance, a persistent and continuing crop of boils on the legs and back, which were cured only after the use of a stock vaccine, made me think of the previous infection, but it was then too late to try to prove any connection. This may be entirely fanciful, but it does no harm to keep such an eventuality in mind.

In the case cited, hoarseness was a very minor consideration. It merely pointed the way to a careful consideration of its cause.

Hysterical aphonia, while fairly rare, has been seen by every laryngologist of experience. There is no history other than sudden severe loss of voice of undetermined origin. Examination reveals a bowing of the cords at the middle. Both ends may approximate quite well. I do not know that anyone has ever explained this medical curiosity satisfactorily. The neurotic factor, whatever it is, seems dominant, but the sudden recovery is little short of miraculous, and most of them do recover in a few days or weeks. It requires a sudden shock to bring about restoration of voice. Years ago, at the old Vanderbilt Clinic, I re-

member seeing the “hot spark” applied to the patient's larynx in two or three cases. The current used was strong enough to give a sudden contraction of the laryngeal muscles, and the patient uttered a sudden cry of fright, whereupon the voice became immediately normal. I have reported one curious case.\* A man was referred to me by an insurance company with the history that while at work in a cellar, a step-ladder toppled over and knocked him down. When he came to, he was much surprised to find that he could not speak. The insurance company which carried the liability for his employer, referred him to me, and remembering the use of the hot spark, I sent him to an electrotherapist with the diagnosis and the recommendation for a “surprise attack.” This gentleman, through inadvertence, used the sinusoidal current instead, with no immediate result. But the patient, who lives on the east side of the city, made his daily visit on foot through Central Park. He was on his way to receive a fourth treatment when he was set upon by thugs who stole his wallet, his watch and his staff, and with the storied horse laugh, left him lying quite helpless. Thereupon, he set up anxious cries of Police! Murder! Thief!, and was quite amazed to find that his voice had returned. Examination the next day showed a normal larynx.

Hoarseness in singers is not infrequently caused by so-called Vocal Nodules. These are usually the result of bad singing, that is, faulty voice placement long continued. Or they may come on after singing “over” a laryngitis. The swollen cords no longer have a sharp vibrating edge and hence they must be squeezed together in order to function at all. This forcing seems to produce a condition similar to the rubbing which brings about a corn on a toe. At first, a tiny mucous gland, on the margin of the cord, becomes closed and we have what amounts to a retention cyst. At this stage, the condition is easily cured. Later on, however, the area becomes “organized” and a fibrous nodule results. In the early stage, daily applications of silver nitrate, beginning with one per cent and increasing in strength, can effect a cure. Vocal exercises also help to get rid of nodes, and there are teachers who claim that they can “sing off” these excrescences—any and all of them. I have yet to be convinced of this in those fibrous conditions where a structural change persists until removed surgically. Theoretically, at least, you cannot walk a corn off your toe, but by too much walking you can make it impossible to walk at all. Is not the analogy applicable to the vocal cords as well?

Instead of ascribing all aphonia to “just a cold,” we must bear in mind that the great diagnostic triad, malignancy, tuberculosis and syphilis stand ever ready to make fools of us. Worse than that is ultimate loss of a pa-

\* Curious Cases in Ear, Nose and Throat Practice. The Medical Times and Long Island Medical Journal, November 1932.

uent's life through our lack of diagnostic acumen. Nonoperative treatment of this kind of hoarseness need scarcely be mentioned here, although physical therapy, radium, radiant light and heat and convective heat as well as roentgen ray may have a place at times. But radium, in laryngeal malignancy has been repudiated by many, if not most laryngologists—pre-eminently by the late Dr. John E. McKenty, whose experience was wide and well-considered. To say that he hated radium in these cases is to understate the truth; for he despised it.

In the hoarseness of chronic laryngitis of infectious origin, where structural changes are not too pronounced, physical agents are of value. Electricity in its various phases has the support of many men of eminence. Both the Faradic and Galvanic currents have their supporters, and the infra-red lamp is much used, as is the vacuum electrode of the high-frequency current. The laryngologist, however, should have special training in these modalities before venturing too far, as troublesome burns and grievous accidents may arise from the unskilled use of such powerful agents.

Sudden severe hoarseness in singers is often due to a ruptured blood vessel within the cordal structure. Recently, a well-known opern singer became suddenly hoarse while "warming up" in his dressing room preparatory to going on. The stage was set and it was impossible to "change the bill" after the time-honored method of disappointing thousands of auditors who have bought tickets for a certain opern, only to be faced at the last moment by an announcement of a change. In this instance, another tenor who knew the role was promptly found and gave an extraordinary performance without rehearsal. He should have had a medal for his heroism in stepping into the breach and subjecting himself to possible unjust criticism. The newspapers reported that a sudden attack of "clergyman's sore throat" had brought about the singer's disability. This phrase has no place in medical parlance, although it is mentioned in most of the books. Insofar as I can find out, it means a pharyngitis with extension to the glottis, or in other words, infection with swelling of the cords due to excessive use of the voice. Although I have had no conference with the laryngologist who gave out this information to the press, I am sure that he merely used this phrase as a public pacifier, not wishing to commit himself to the actual diagnosis for obvious reasons. Beyond a doubt this was a case of hemorrhage into a cord, due to forcing the voice under adverse conditions—a beginning laryngitis, perhaps.

My reason for thinking so is based on an experience of some years ago. A vaudeville singer of repute became suddenly voiceless during an act where he was supposed to imitate a great tenor. He promptly left the stage and routed me from bed in order that I might

"tell his manager" when he could go to work again. Laryngeal examination showed the left cord suffused with blood. No sound came from the larynx upon effort to phonate while the mirror was in place. His manager was told that this condition would require two or three weeks for absorption, no matter what the treatment; but there was a blocked nose due to deviated septum, accompanied by a discharge of mucus into the nasopharynx (probably a low-grade sinusitis); and that the tonsils were also infected. It was proposed to treat the larynx and at the same time to do the necessary operating. In this way, no extra time would be lost and, when the larynx was again normal, the conditions which contributed to the strain would be absent. The singer did not take my advice, but went to a neighboring city where he was told that "the New York doctor was all wet." What was really required was an immediate tonsillectomy, as the hoarseness was entirely due to infected tonsils. Accordingly, this operation was performed, severe hemorrhage ensued, requiring a blood transfusion, and the singer was "off stage" for more than a year. I suppose I ought to give thanks for missing that one!

There are so many ways of treating acute laryngitis that it is useless to offer anything in the way of standardization. *Chacun a son goût*—each according to his taste, as the French have it. In Chiari's and in Menzel's clinic in Vienna, many years ago, I saw much use of cocaine in these cases. They used to drop tea to twenty per cent into the larynx every day. This, of course, relieved the cough, temporarily, but I have often wondered how many of these poor people became addicts as a result.

At one time I used menthol in alcohol, a 5% suspension dropped into the larynx. It was efficient but caused such a burning sensation that it was discontinued.

Lozenges, troches and all the great company of such medicaments ought to be taboo among physicians, even if they do appeal to the laity because of their convenience, etc. They upset the stomach and do little to effect relief. Rather, recommend the old-fashioned honey, molasses, candy or pineapple juice of our grandfather's day. As an instillation, guaiacol in alcohol, from 2 to 5%, helps both the larynx and trachea. One-half c.c. dropped in daily, is enough as a rule. If a gargle seems desirable, I recommend Hexylresorcinol, from 50% aqueous solution to full strength.

I am convinced that the course of these acute conditions is measurably shortened by rest in bed, or at least on a couch most of the time; from eight to ten hours sleep; and plenty of good, wholesome food as afforded by a mixed diet. Common sense demands elimination via the emunctories. We all have our favorite ways of bringing this about.

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## Benign Neoplasms of the Larynx

by

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STRICTLY speaking, the above title might be considered to include all benign tumors of the Larynx, regardless of their etiology, in which case it would be necessary to discuss such general conditions as Tubercle formations; Gumma, etc. However, since these conditions have been so thoroughly taken up in a previous paper, it is the intention of the writer to limit his talk to Benign Tumors of the Larynx as considered in the narrower sense. Among such Benign Tumors may be mentioned the following:

Papilloma, Polyp, Vocal Nodules, Contact Ulcers, Fibroma, Cystoma, Lipoma, Adenoma, Myoma, Lymphoma, Chondroma, Osteoma, Varices, Mycosis Fungoides and Thyroid Tumors.

A large percentage of these are so rare as to be unworthy of serious discussion. As, for example, the Thyroid Tumors of the Larynx mentioned by Jackson, who, in his large experience, has seen only eleven cases. With your permission, therefore, I will limit myself to the following, frequently seen, Benign Tumors, viz: Papilloma, Polyp, Varices, Hematoma, Fibroma, Lymphoma, and one of the most important, the ordinary nodules so frequently referred to as Singer's node.

Symptoms of Benign Tumors in the Larynx vary markedly, depending on the size and location of the tumor. When on one of the true or false cords, hoarseness occurs very early, and is usually the most common complaint, and frequently will be the only symptom present. However, even hoarseness may be absent in some tumors, as in growths on the epiglottis arytenoid, or any of the more roomy portions of the Larynx. Among the other symptoms frequently seen are dyspnea, cough, croup tendencies and occasionally pain.

### Papilloma

Of all the Benign Tumors of the Larynx, Papilloma appears to be by far the most important. It must be borne in mind that there is a distinct difference, histologically and clinically, between Papilloma and Polyp, and yet, frequently enough, care is not taken to differentiate between these two terms in our ordinary diagnostic nomenclature. Histologically, a Polyp is an edema of the connective tissue beneath the epithelium, bulging it out, and, as a result of pressure, the epithelium becomes thin and nonpapillated. It is usually associated with thrombosis and varicosities of the veins, quite analagous to Hemorrhoids. In marked contrast to this picture is the histological appearance of a Papilloma which shows

a papillary hyperplasia of the surface epithelium, but the basement membrane remaining intact. It is quite analagous to a cauliflower growth.

In childhood, this condition is most frequently seen as a multiple papilloma, while in adult life the single papilloma is more common. The usual history of papillomata in childhood is as follows: the mother states that the child, for some months past, has been having increased hoarseness, after which a gradually increasing difficulty in breathing has been noticed. Many things, such as enlarged Tonsils, Thymus, etc., must naturally be considered. On a cursory examination, no explanation will account for the condition. A mirror examination is impossible on account of the age of the child, but direct Laryngoscopy immediately reveals that there is a multiplicity of Papillomata springing from the true and false cords. It is too frequently forgotten that Papilloma of the Larynx in childhood is usually self limited, and will ultimately cure itself. In olden days, the treatment consisted of a semi-permanent Tracheotomy, the tube being removed when the laryngeal breathing was reestablished, the time usually amounting to upwards of five years. With our modern technic with the use of the Laryngoscope, the logical treatment is repeated removal of the Papillomata as they recur, being particularly careful not to damage in any way the important and permanent structures of the Larynx. It cannot be too strongly emphasized that the true and false cords or the Arytenoids, must not be sacrificed in this removal, and if any error must be made, it must be done on the side of the Papilloma. Occasionally, even in childhood, a single removal of Papillomata will effect a permanent cure. Resorting to Tracheotomy for this condition, must, if possible, be avoided.

It is apparent to clinicians that the occurrence of multiple Papillomata in children has been on the decrease for the past ten or fifteen years. This may possibly be accounted for by the more modern understanding of diet during infancy and early childhood, combined with a more careful study and treatment of the sinuses, tonsils and adenoids.

In the adult stage this condition is more frequently seen as a single, isolated Papilloma, and with a single removal, preferably by direct Laryngoscopy, a permanent cure is usually effected. However, at times, a multiplicity may occur even in the adult stage. Should this condition be recognized, the treatment is exactly the same as in childhood, but it must always be borne in mind that, occa-

sionally the papillomatous growth will invade the underlying structure (submucosa), and change characteristics, even to such a degree as to eventually take on a true malignant form. To express this in simple words, chronic, multiple Papillomata may at times be the forerunner of a true malignancy of the Larynx, and must be considered with a certain degree of apprehension. In the opinion of the writer, and regardless of modern theories, the clean-cut surgical removal of these Papillomata is far superior to the questionable treatment with electro-coagulation, radium, x-ray or similar applications, as these latter cannot be measured to so definite a degree, and offer no more, in so far as recurrence is concerned.

### Polyp

Clinically, in contradistinction to Papilloma, it most often occurs as a single, elongated, glistening mass, usually hanging by a definite and thin pedicle. It has a marked tendency to alter its position during forced breathing, and may at times almost entirely disappear from view by assuming a subglottic position. Tendency to recur is rare, and simple removal usually effects a permanent cure.

### Hematoma

Only a brief mention of Hematoma must be made. This condition is a simple extravasation of blood with ultimate formation of blood clots beneath the mucous membrane of any portion of the Larynx. It is commonly seen as the result of Trauma to the Larynx, as in choking, violent coughing, or any similar type of injury sufficient to produce bleeding, but in which the blood has not actually penetrated the surface mucous membrane. Unless the actual tumor formation is large enough to produce a mechanical breathing obstruction, the Hematoma should not be surgically interfered with, as the blood clot will ultimately be absorbed. Complete rest of voice, ice packs to neck, and the possible use of potassium iodide to encourage absorption, should limit the attempt at treatment.

### Varices

Varices are enlarged tortuous veins, arteries or lymphatic vessels, with the Venous type predominating. This latter type of Varix, according to an extensive study by Imperatori, is pathologically identical with an ordinary hemorrhoid.

This condition usually appears as a small, bright red, bead-like tumor along the surface of one of the true cords. Occasionally it is

pedunculated. As the name implies, it is the result of a collection of small blood vessels, which have assumed such a definite outline as to demand consideration as a true neoplasm. The growth may advance to much larger proportions, so that a fair section of the Larynx may be involved. As in the case of Hematoma, this tumor is usually the result of the acute faulty use of the voice, as in shouting. The term acute is mentioned as causative factor in contradistinction to the chronic faulty use of the voice which is much more prone to produce a Singer's node. Varices are essentially benign, and when treated by simple surgical removal under Direct Laryngoscopy, leaves the cord in normal condition as far as function and appearance are concerned, with little tendency to recur. The more modern theories advance the possibilities of Radium, or the removal with Diathermy. Applications of Radium are rather difficult in any Laryngeal lesion. The treatment by Diathermy must be considered. It would seem that, except under unusual circumstances, a direct removal is more simple and accomplishes the same result.

### Fibroma

This condition may be dispensed with in a few words. It usually occurs on one of the cords, but may appear in any portion of the Larynx and, from an etiologic standpoint, in the majority of cases, no cause can be discovered. Only two symptoms are present. In the smaller type, and those located on the cords, hoarseness is always present. But if the tumor assumes larger proportions, interference with respiration will ultimately develop. Surgical removal by Direct Laryngoscopy is the safest, and logical method of treatment. Recurrences are extremely rare.

### Lymphoma

This type of tumor, when not associated with a general Lymphomatosis, is practically always benign. This condition is uncommon; it usually occurs as a single tumor, and it may be considered as the only benign tumor in which surgery is contra-indicated. The external application of Radium brings about a total disappearance of the tumor, and when properly applied, the normal structures of the Larynx are unharmed. The tumor, as a rule, does not recur after removal.

### Singer's Nodes

This condition, which has been so frequently discussed, still remains in the category of the more or less unsolved problems. so far as the

outcome is concerned. It has been recognized for many years that individuals who constantly use their voices, such as singers and orators, are frequently the unfortunate victims of a gradually increasing hoarseness, which in some instances becomes so marked as to definitely interfere with their careers.

As a result of this observation, it gradually became apparent to clinicians that the actual production of voice must be the underlying cause, and further study definitely indicated that when the voice is in more or less constant use under unusual circumstances, a proper method of delivery is essential, or hoarseness will result. With the coming of the Laryngeal mirror, it soon became apparent that, in these individuals, a pathologic change had taken place in the true vocal cords, namely the formation of a small but definite nodule appearing on the contact surface of one or both cords. About this time, consultations between vocal instructors and Laryngologists offered several interesting observations. First and most important it was noted that these nodules appeared in singers who were attempting to perform in the wrong register. As for example, the low soprano endeavoring to take the notes only natural to an extremely high soprano, and *vice versa* on the other end of the scale. It cannot be too strongly emphasized that the range of every human voice is limited. A tenor cannot attempt to go into a range too low for his natural anatomical abilities. On the same basis, a voice which is small in volume, must not be forced to assume the large, vibrating, and forceful type. Any attempt to disobey the above mentioned facts over a prolonged length of time will often result in a gradually increasing hoarseness, until eventually the entire quality and characteristics of the original tones are lost, and replaced by a rasping, harsh and extremely unpleasant sound. A further study in conjunction with the vocal instructors, made it apparent that these nodes most frequently appear when there is an attempt on the part of the singer to adopt a register lower than his natural tone. This observation applies not only to the singer but to the orator as well.

Pathologically, a singers node consists of the piling up of the surface or epithelial cells of the true cord on its contact side. It may occur on any part of the cord, but it is most prone to occur on the anterior third when the register is abnormally high, and on the posterior third, when dealing with the lower type of voice. These nodules must not be regarded as true Papillomata and consequently a single removal does not necessarily effect a cure. They must be regarded rather as a definite entity and from the singer's standpoint, their seriousness lies in the fact that they are almost always associated with a lack

of true coordination of the delicate muscles used in the normal production of voice.

### Treatment

Reviewing the history of any definitely established singers node, it becomes apparent that the degree of treatment will entirely depend on what stage the condition is seen in. If the case is seen in the early stages, no nodule will be visible on either cord, but nevertheless, the patient will show vague, indefinite throat symptoms and minor changes in tone when compared to what was his normal voice. These warnings, such as too frequent efforts to clear the throat during unusual voice activity, etc., will gradually increase until a temporary, and finally a permanent, hoarseness will appear. It is obvious that the treatment must depend upon the stage in which the condition is first observed. In general, it can be said that the first and most important fact to be borne in mind, is that the underlying cause must be eliminated. This fact cannot be too strongly emphasized, and a thorough mutual study, between the Laryngologist, patient and vocal instructor, should determine what abnormal vocal effort is being made on the part of the patient. Frequently it will be found that too large a range is being attempted, or as mentioned above, the register is unsuited for the particular Larynx. Having determined and corrected this abnormality, the second essential is complete rest of voice, often times for a period of years. This procedure alone, in the reasonably early cases, may bring about a cure unless the individual again proceeds to abuse his voice. In the more advanced type of case, and in one in which a nodule is actually visible, a difference of opinion exists as to the proper procedure.

Many excellent Laryngologists insist that no surgery is indicated, and that the only treatment still consists in correcting the cause, and placing the Larynx at rest. However, in the opinion of the writer, when a fair sized nodule is actually present, coaptation of the cords is impossible, and even with prolonged vocal rest mechanical irritation still exists, so that the condition will rarely cure itself. This is particularly true, if one remembers that even during the normal process of breathing, the vocal cords do not remain stationary, but rather are in more or less active motion, even though the patient completely abstains from talking.

It would seem, therefore, that in this latter type of case, the actual shaving off of the nodule or nodules cannot be considered too radical, naturally assuming that great care is taken not to injure the true cords. Following this procedure, rest and the ultimate proper replacement of the voice is essential.

## Tuberculous, Malignant, and Syphilitic Types of Hoarseness

by

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**H**OARSENESS is the common symptom of tuberculosis, carcinoma, and syphilis. During the past five years, with better methods of examination and constant education of the laity, earlier diagnoses are being made in laryngeal cancer, and as a result of this the present percentage of cures, which is now seventy to eighty per cent, undoubtedly will be higher.

Six per cent of all malignant tumors occur in the larynx. These are classified as ninety-eight per cent carcinoma, and two per cent sarcoma. A further grouping shows that ninety six per cent are squamous cell varying in malignancy, two per cent basal cell, one per cent papillary carcinoma, and one per cent adeno-carcinoma.

Depending on location and extent of disease, which is of extreme importance surgically and prognostically, we recognize clinically, extrinsic, borderline intrinsic, and intrinsic.

The extrinsic group includes cancer whose origin is from the epiglottis, arytenoid, ary-epiglottic fold, the laryngeal surface of the pyroform fossa, and the pharyngeal surface of the cricoid cartilage. This group rarely gives

any warning, and our earliest symptoms are local discomfort and dysphagia, no change in voice, and metastases occur early.

Borderline intrinsic is advanced intrinsic cancer, slow and superficial growth, extension downward and forward, not upward and backward, low degree of malignancy, and in this group, with our improved operating technique, more patients are being operated upon with very good results.

The intrinsic group includes all cancers arising from the cord, ventricular band, interarytenoid region, and the subglottic area. And we subdivide these further into anterior intrinsic involving anterior two thirds of larynx, and a posterior group including the posterior third of larynx. The earliest symptom in the anterior group is hoarseness, and in the posterior group we find hoarseness and local discomfort.

In order to give one a clearer idea of the differential diagnosis in these diseases the writer has placed the corresponding conditions and appearances, as far as possible, in parallel columns, remembering that one may encounter two or even three diseases in the same patient.

TUBERCULOSIS	SUBJECTIVE SYMPTOMS CARCINOMA	SYPHILIS
Hoarseness (mild to complete aphonia)	Hoarseness Progressive (90%)	Hoarseness (secondary stage)
Recurrent aphonia, also dysphonia	Recurrent aphonia, also dysphonia	Recurrent aphonia, also dysphonia
Both sexes	Males, females postcricoid	Males
Age under 40	Age 20 to 80 years	Age not constant
Always secondary to lung involvement	_____	_____
Voice weak, hollow, painful	Voice easily fatigued painful	Voice rough, raucous, pain less, tertiary stage
Odynophagia for solids in ulceration of epiglottis and ary-epiglottic folds, for liquids in muscle involvement	Odynophagia, extrinsic	Odynophagia late, ulceration of gumma
Hyperaesthetic	Ulceration painful	Anaesthetic
Cough	None	None
Expectoration	None	None
Emaciation early	Emaciation late	Emaciation late
Enlarged glands, occasionally tender	Enlarged glands, hard, fixed in extrinsic	Glands rarely enlarged

Before mirror examination, throat and larynx should be anesthetized with either 4 or 10% cocaine to abolish reflex. Ample time should be given for anesthesia to become

effective. One cannot stress too strongly the need of very careful examination, as many physicians and otolaryngologists do not take the time to make a proper diagnosis.

## OBJECTIVE SYMPTOMS—MIRROR EXAMINATION

TUBERCULOSIS	CARCINOMA	SYPHILIS
Pretubercular stage difficult to recognize.	Precancerous stage	Acquired form, primary sore rare.
<i>Pharynx</i> : pallor and anaemia.	No change	Mucous plaques, gumma scar formation.
<i>Larynx</i> : mucous membrane often pale red.	Mucous membrane (non-inflammatory)	Mucous membrane vermillion.
<i>Epiglottis</i> : Laryngeal surface infiltration. oedema, ulceration (turban shape).	—————	<i>Epiglottis</i> : lingual surface.
<i>Post-commissure</i> : thickening, irregular, seen on phonation.	1. Persistent congestion and thickening of cord. 2. Definite tumor.	Hyperaemia, congested, generalized inflammation, mucous patches, gumma may form and break down forming ulcers.
<i>Arytenoids</i> : smooth, oedema, usually bilateral.	3. Limited infiltration, cupped or retracted. 4. Sessile, white or reddish gray tumor. 5. White fringe like border on cord.	
<i>Location</i> : posterior third, slow growth.	<i>Location</i> : anterior two-thirds.	<i>Location</i> : anterior third.
<i>Bilateral</i> : general rule.	<i>Unilateral</i> : slow growth and metastases. No distinct line of demarcation.	<i>Bilateral</i> : rapid growth.
Ulceration early.		
Ulcer on cord and elsewhere, pale, superficial, moth eaten, edges inactive, ( <i>nibbles</i> .)	Ulcer, raw, red, overgrown edges, dirty white on cords.	Ulcer, dirty drab, punched out, undermined, ( <i>bites</i> .) little tendency to heal.
Not much deformity.	Unilateral fixation of cord.	Acute oedema and cicatrization may cause stenosis and dyspnoea.
Immobility of cords late.	Loss of mobility, second symptom.	Fixation left cord. Aneurism is most frequent cause.

The night before direct laryngoscopy the patient should be given a sedative (allonal, luminal or amytal) and repeat the morning of operation. One hour before operation a hypodermic of morphine sulphate grs.  $\frac{1}{4}$  and hyoscine hydrobromide grs.  $\frac{1}{300}$  should be

given, and cocaine anesthesia as outlined in a preceding paragraph. Some patients will require general anesthesia.

All laryngeal growths are found to be much more extensive when seen by direct than by indirect laryngoscopy.

## ABSOLUTE SILENCE AND ABSTENTION FROM ALCOHOL AND TOBACCO FOR TWO WEEKS—REPEATED ROUTINE MIRROR EXAMINATION—DIRECT LARYNGOSCOPY

TUBERCULOSIS	CARCINOMA	SYPHILIS
Biopsy sometimes necessary. Remembering danger as punch forceps force bacilli into tissue, scar wound after removal of section.	Biopsy repeated if necessary. Report from two pathologists. Positive report must be backed by clinical evidence. 11½ months.	Biopsy rarely necessary. Obtain history, primary sore, skin eruptions, Wassermann. Examine septum, soft palate for loss of tissue, scarring, quick response to treatment.
Complete physical and x-ray examination, temperature, repeated sputum examinations.	Careful x-ray study neck and chest.	—————

Lantern slides were used with this talk.

In conclusion I can only reiterate what Dr. Chevalier Jackson has stated, and that is, there will be fewer deaths from laryngeal cancer when every member of the medical pro-

fession realizes the frequent malignant nature of chronic hoarseness.

References: Jackson and Coates, A. Logan Turner, J. E. MacKenty, Gabriel Tucker.

140 EAST 54TH ST.

# Etiological Factors of Mammary Cancer in 200 Women

Also a Control Study of 100 Normal American Women

by

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Read before the Section of Obstetrics and Gynecology  
at the Annual Meeting of the Medical Society of the State  
of New York, April 5, 1933

TO obstetricians and gynecologists, the subject of cancer of the breast is one of great importance, particularly the phase dealing with its etiology. The obstetrician is confronted with the varied practical problems of the care of the breast during the months before parturition; and again with the post-partum breast management.

In 200 consecutive cases of cancer of the breast, we have made a detailed study relative to pregnancy, miscarriage, nursing history, abscesses of the breast, "enked-breast," nipple inversion, "sore nipple," etc. A study of these points has brought us to the conclusion that breast drainage and stagnation are factors of prime importance relative to the subsequent development of breast cancer. To test the validity of this conclusion, a control of 100 patients whose complaints were other than mammary, were contrasted. This comparison emphasized stagnation as an important contributory agent to the development of mammary cancer. To test this stagnation theory, Halsey Bagg<sup>3</sup> in our laboratory took laboratory animals and subjected them to artificial stagnation by ligation of the nipples and by breeding experiments. The striking results of these animal experiments, together with the detailed histories of the control cases and the cancer patients, seem to fully justify us in our final conclusion that an important relationship exists between stagnation and the development of mammary cancer.

To some, the facts as brought out, may be at variance with your clinical impressions. But, on the other hand, it must be pointed out that few of you have a large experience in the study of breast cancer because of the fact that the patient with breast cancer, more commonly consults the general surgeon or cancer specialist about twenty to thirty years following the time when the obstetrician

took care of the patient. The problems brought out in these studies are numerous, striking and suggest a wide field for investigation. They strongly emphasize the "stagnation theory" of mammary cancer.

## STAGNATION THEORY

By stagnation of the mammary system we mean that certain definite mechanical factors produce partial or complete blockage of the duct at some place situated between the periphery (the acini) and the nipple terminus (the estuary of the duct). Such an obstruction may be due to one of many factors. Let us examine a few which may enter into the production of breast stagnation.

1 A localized outgrowth of the lining epithelium at some position along the mammary system causes stagnation and obstruction behind this point

2 The condition of the nipple (a) Some nipples are inverted and are pulled backward as if the terminal ducts were not long enough to allow for the normal nipple protrusion, (b) Other nipples are bivalved, there being a transverse depression across the widest diameter producing an acute angulation of a number of terminal ducts within the nipple itself. Inverted nipples more commonly have excessive moisture, redness, and a low grade chronic infection, than those nipples which normally protrude. Such inflammation and edema produces a marked stenosis of the terminus. (c) Another type is the partially inverted or 'puckered' nipple, this is similar to a partially inverted finger of a glove. (d) The 'flat' nipple is flush with the surface of the areola. This type seems to be adherent as if held down by adhesions. The normal protruding nipple is not "stuck." It can easily be pulled out by the fingers for nearly a centimeter. (e) The dwarfed nipple is very hard, small white, the type typical of the "spinster's nipple." By pumping this nipple I have never been able to obtain any fluid in a single case. They usually have a narrow and inconspicuous areola. This fibrous nipple has its terminal ducts greatly stenosed. (f) The ulcerated nipple the mucoid material extruded from certain nipples, sticks tenaciously on the nipple surfaces, so that in removing it, a bleeding raw surface is uncovered. Inflammation and resultant fibrosis produce stenosis and partial obstruction. In the series of 200 cancer cases, the congenital inverted nipple was present in 10 cases (5 per cent).

3 A fibrous scar across the ducts, the result of an incision for abscess or a contractile scar secondary to a traumatic hematoma, causes obstruction

4 The formation of a cyst (miniature or

<sup>1</sup> Reported before the American Cancer Research Society Washington 1923

<sup>2</sup> I wish to thank Professor A. R. Dochez of the College of Physicians and Surgeons, Columbia University, for permission to use as part of this study, the patients on the Medical Wards of the Presbyterian Hospital.

<sup>3</sup> Adair, Frank E. and Bagg, Halsey J. Breast Stasis as the Cause of Mammary Cancer. International Clinics Vol. IV, Series 35, p. 19-36.

<sup>4</sup> Bagg, Halsey J. The Role of Functional Activity in the Production of Mammary Carcinoma. The American Naturalist 60 234 1926

larger), a fibro-adenoma or a localized inflammatory nidus within or without the duct causes obstruction.

5 A localized obstruction such as a plug produced by a collection of dessicated, desquamated lining cells. (Fig. 1).

6 The epithelial débris plugging up the duct estuary (Fig. 2).

7 Other causes

By the retention of the desquamated lining cells, mucoid material, cell detritus, etc., we

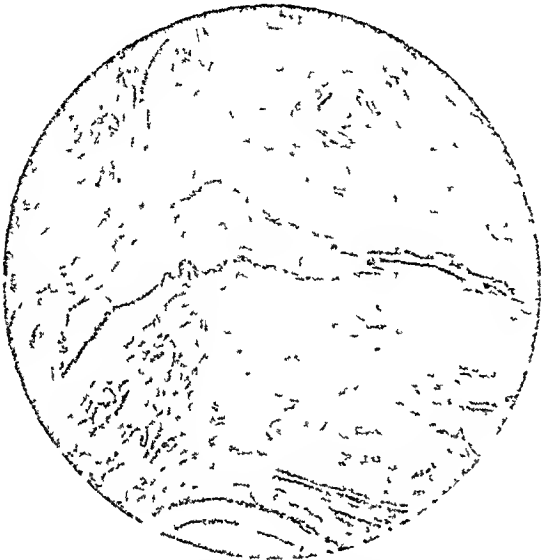


FIG 1—SHOWING DILATED DUCT FILLED WITH A PLUG OF DESQUAMATED LINING CELLS, MUCOID MATERIAL, CELLULAR DEBRIS, CRYSTALS ETC  
This obstruction causes stagnation peripheral to its position in the mammary system



FIG 2—SHOWING THE TERMINAL DUCT ESTUARY COMPLETELY FILLED WITH A PLUG OF DESICCATED CELLULAR DEBRIS  
It also shows two ducts entering the estuary

assume that an inflammatory reaction is set up in and about the duct system. Infiltration by lymphocytes and polymorphonuclear leukocytes takes place. The nature of this irritation is thought by Geoffrey Keynes in his distinguished article on "Chronic Mastitis"<sup>3</sup> to be chemical. The cellular detritus together with products of degenerated milk (as in a case of recent pregnancy or miscarriage) lie within

the ducts and acini. We believe the reaction on the part of the tissues is to stimulate the duct lining cells to hyperlastic changes; these lining cells multiply and heap up several rows high giving the appearance of precancerous tissue. Intraductal papillomas<sup>4</sup> are formed (Fig. 3). We believe that the precancerous areas continue their growth and terminate by invasion and infiltration—with the development of true cancer.

When one attempts to span the space between the precancerous lesion and true cancer, he is then on much disputed soil. Exact proof is difficult. However, every pathologist has seen many microscopic fields showing a minute point where the precancerous lesion is just beginning to invade surrounding tissue. It is exactly at this point of invasion where the lesion turns cancerous.

### ANATOMY

The breast is an organ suspended from the chest, consisting of from 15 to 20 separate and distinct terminal ducts, each duct having its own ampulla, and its main duct, ductule, and acinar system. The different systems do not communicate with each other. The ampulla, an elliptical or oval expansion of the terminal duct, lies within or at the edge of the areola. Cheate states: "From the ampulla the duct continues its course for about a centimeter and divides into two main branches. One of these passes backwards towards the chest wall, and the other is distributed to the periphery and is parallel with the surface of the breast."

### FUNCTION

In the active as well as the inactive breast,

the normal cell regeneration or replacement process continually takes place. The desquamated cells lie free within the lumen of the ducts and acini. In the case of the virginal breast, the lumen contains degenerated desquamated cells, cell detritus, mucoid material, and some crystals. This cellular detritus, mucoid material, etc., are gradually pushed along from the acini to the terminal duct, and ex-

<sup>3</sup> Keynes, Geoffrey. Chronic Mastitis British Jour. Surg. 11.89, 1923.

<sup>4</sup> Cheate and Cutler: Tumors of the Breast. J B Lippincott, Philadelphia, 1931.

truded at the nipple. There is probably a resorption of some liquified material. However, one can occasionally obtain a watery secretion by gently stroking the duct and by the use of the breast pump. This is true not only of the multipara but also of the nullipara. This is contrary to the view of many who hold that there is no secretion from a normal breast. Women are unconscious of any such secretion, possibly because it is slight in amount, and because it evaporates as does perspiration and any residue is rubbed off by the clothing. However, anyone who observes carefully and has an opportunity to examine a large number of breasts will not infrequently note this secretion from one or more ducts

every lobule increases to several times its virginal volume and this, together with possible formation of new lobules, causes the breast to become tense and increased in size. "During a large part of the period of gestation, the glandular or parenchymatous tissue continues to develop, while the adipose tissue, pressed upon, slowly disappears by atrophy until the entire mamma is sometimes composed of the glandular tissue."

The breast is greatly increased in volume by the formation and extension of new ductules, and by the creation of millions of new cells lining the new acini and ductules. Each new cell created in excess of the original number present during the inactive period of the



FIG 3—SHOWING THE INTRADUCTAL PAPILLOMAS are the result of continued irritation

We believe these hyperplastic manifestations frequently (From Cheate and Cutler, Fig 47 p 103)

On the other hand in the physiological active breast, not only is the above process taking place, but the extrusion of desquamated cells into the lumen is occurring at a very rapid rate. Deaver and McFarland state that during pregnancy "it is certain that in each already existing lobule further growth takes place in the form of many small pocket-like extensions from the tips and side of the alveoli or ductules, thus originating the true glandular acini." They also state that thus

breast must eventually be extruded. These cells are suckled out by the infant and are present in the milk. The amount of milk secreted by the physiological processes of the lining epithelium varies enormously; in one extreme there may be but a very small amount of milk secreted—while, on the other hand, there may be a huge amount—a condition known as galactorrhoea. In a case of a young woman in Japan reported by Remy six and one quarter quarts of milk a day were taken

\* Deaver and McFarland. The Breasts. P. H. Kistner's Son and Co. 1917 p 11

\* Remy. Med Times and Gazette 2 581, 1883



It is thought that both the amount of new glandular tissue produced during pregnancy, as well as the amount of milk secreted, depend upon the hormonal stimulation of the breast. A normal amount of milk per day (possibly a pint to each breast) if locked within the breast, would contain such an amount of fat crystals, proteids, fatty acids, milk sugar, etc., as to be of considerable volume of solids, even though the mammary system may have taken up the water from the milk by resorption. It is these solids, together with the volume of desquamated cells imprisoned within the breast, that are subsequently responsible for the low-grade chemical inflammatory reaction on the part of the breast.

All mammals have their normal period for suckling their young; and it seems more than likely that the human is not meant to be exempt from this function—nor do I believe it desirable either for the baby or the mother, that this physiological process be interfered with, unless there is some definite contraindication. My personal impression is that physicians too easily permit the mother to feed the baby on the bottle because of the inconvenience of nursing, and call in a pediatrician to supervise the feeding.

Many times the economic status of the mother makes it nearly impossible for her to nurse the child, as she must work away from home to earn a living. One can comprehend and sympathize with the causes and excuses given for not nursing.

Clinical experience adds to the weight of the stagnation theory. We know that it is frequently possible to release the obstruction which produces a localized area or segment of mastitis. The procedure must be delicately carried out. It consists in first gently kneading vaselin well into the nipple in order to soften the miniature plugs of epithelial debris (Fig. 2) situated in the terminal duct estuary. Following this, the nipple is carefully washed with soft cotton and soap. The nipple is then rolled between the forefinger and thumb, and washed again. The plugs are released and are large enough to be seen with the unaided eye. One then gives a gentle stroking motion from the periphery of the breast toward the nipple, over the localized area of mastitis. Following this one uses the bulb pump or electric breast pump<sup>1</sup>. In many instances, cases of localized mastitis so treated have cleared up promptly. The two following cases illustrate the point:

The patient, E. T., aged 37, first came to us February 3, 1926, with a mass 6 by 3 by 2 cm. It was thought to be localized mastitis. Six months later she returned, when I pumped the

breast and obtained from each of the five ducts, a thick creamy material similar in consistence to "cold cream." Dr. Ewing's report on this material was "mucus, fat, desquamatic, hydropic epithelium." When next seen twenty-six days later, the tumor was entirely gone. It had been situated in the outer upper quadrant. We had succeeded in withdrawing the material, and following this, the inflammatory reaction subsided. This patient was the mother of three children. The first two she had nursed. The last one born thirteen years ago was not nursed. The milk products and cellular debris of the last pregnancy had been locked up within the mammary system.

Another patient, A. M., age 42, came to the Memorial Hospital presenting the evidence of bilateral chronic mastitis (not localized). She had had four children and one miscarriage. The patient had only nursed her first and second children, not the third and fourth. The last child was 4 years old. The terminal ducts were very large, in fact, one or two almost admitted the tip of a filiform bougie. The breasts were pumped. From the right breast one-third of a test tube of creamy material was withdrawn from about eight ducts. From the left breast a thick pasty material came from one duct (Fig. 4). While pumping these breasts for some weeks, much material was withdrawn. The heavy breasts became smaller, the symptoms of heaviness and discomfort disappeared.

We carry out this treatment on all such cases in the breast clinic. However, as a warning, one must be certain that he is not dealing with cancer. It must be stated that we succeed in clearing up mastitis by this method in only a proportion of our cases. The type most liable to meet with success is that of (a) the multipara; (b) the case where the mastitis is segmentally localized; (c) the case where the cellular detritus is soft creamy material,

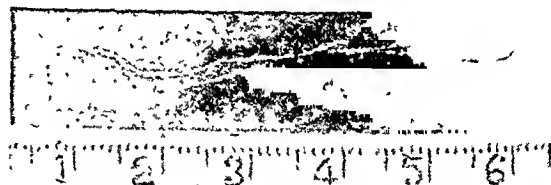


Fig. 4.—SHOWING THICK CREAMY MATERIAL ON A MICROSCOPIC SLIDE.

The material had the appearance and consistence of "putty."

in consistence not unlike putty (Fig. 4). It usually takes about a month for the breast to return to normal after this treatment. The quadrant most frequently drained by this method is the upper outer quadrant where the "tail" of the breast lies. Here the distance from periphery to the nipple is much greater than in the other quadrants.

In a few cases where it has been even as long as ten years since the birth of the last child, we have been able to obtain as much as 10 to 15 c.c. of creamy material from one breast by pumping. Some of these cases have sensitive heavy breasts; and following the removal of

<sup>1</sup> Adair, Frank E., and Pack, George T.: The Use of the Breast Pump as a Prophylactic Measure Against Secretory Stagnation in the Breast; and Possibly Mammary Cancer. *Ann. Surg.*, July, 1931, p. 154.

cancer cases (see Table I) there were 74 (37 per cent) who were either not married, or if married had never borne children. We know from the reports of England, America, France and Germany that cancer of the breast occurs more frequently in those who have never had children, than in those who have borne children. It also occurs at an earlier age. The only explanation which I have to offer for this group, is that the breast of the typical spinster, has an underdeveloped, small white, hard, fibrosed nipple which is the probable site of the obstruction to the mammary system. Fibrous mastitis is also more common in the unmarried than in the married. If one in his practice sees many cases of breast pathology, he will become familiar with the typical appearance of the "spinsters' breasts." The areola is rather pale and narrow. This breast is frequently the site of fibrous mastitis which is usually bilateral. Such fibrosis of the breast and nipple produces stasis which in turn causes the tissue changes leading up to cancer.

In this group of 74 cases, 3 had inverted nipples; one patient had received a profound injury to the breast; and one remarkable case (Case 15) had had five operations on the affected breast. The first operation occurred at sixteen years of age when a fibrous tumor the size of a hen's egg was removed. She was later operated at the ages of 30, 33, 36 and 40 years, respectively, at which time she was found to have a carcinoma. It takes but little imagination to conceive that numerous surgical insults would produce marked duct damage, fibrosis and stagnation peripheral to the scars.

**Women in Whom the Normal Breast Function Had Been Established:—** 1. Of the 200 cases only 17 (8.5 per cent) gave an absolutely normal nursing history. We consider this low figure as very important evidence supporting the stagnation theory.

2. Twenty (16 per cent) of the 126 women who bore children, never nursed. One interesting patient (Case 4) bore 19 children including three pairs of twins. All were bottle babies. The mother states that she never nursed because her physician told her that her milk was "dirty." Her first child was born when the mother was but sixteen years of age. By the time she was forty-four years old her mammary cancer was well developed. After such a mammary history how striking must have been the various pictures of stagnation!

In this group of cases a large volume of milk was bound and locked within the mammary system to degenerate into its end products. This was also true of the millions of newly formed lining cells which eventually desquamated and lay free within the lumen, to undergo disintegration and become a source of chemical irritation.

3. Eleven patients (9 per cent) of the 126 women who bore children, nursed for less than three months. One must not criticize this group as much good was accomplished during those weeks of nursing, especially in the par-

tial clearing of the mammary system. The percentage (9) developing cancer seems to have been reduced by the fact that the breasts functioned normally for a period of several weeks.

4. Thirty-one (20 per cent) of the 126 women with children, nursed part but not all of their children. Various reasons were given for this. Typical histories of this group are such as that of Case 60 who stated that she nursed the first child but not the second. Case 93 stated she nursed three children from eight to twelve months each but not the next child. From this, it would appear that it is better to nurse for a time, even though a short time (9 per cent) than not to nurse at all (16 per cent) or only nurse part of the children (20 per cent).

5. Seven cases (6 per cent) of the 126 cases had what might be considered an excess number of children. I am not sure what comprises an excess number but the number of pregnancies was far above the average. The only way that one could attach the large number of pregnancies to dysfunction, would be in that the normal readjustment period for the breast is not reached. One pregnancy promptly follows another. The new pregnancy is established before the breast is thoroughly drained. In Case 20, the patient had eleven children and one miscarriage. Case 42 had fourteen children during twenty-five years.

6. Twenty-six cases (20 per cent) of the 126 cases bearing children had some unusual factor which seemed to have an important bearing on the nursing and drainage history. This is a miscellaneous group; and only a few factors will be mentioned. Case number 57 had a miscarriage followed later by the birth of five children, then later four miscarriages. A lump appeared during the first miscarriage which always caused difficulty in nursing. Case number 62 developed a caked breast on the same side where the carcinoma later developed. Four patients developed caked breasts. Three developed abscesses that had to be incised. Two always had sore, tender nipples.

7. Miscarriage.—The 126 mothers bore 386 children, and had 172 miscarriages. This gives the high proportion of 31 per cent or one-third of the pregnancies ending in miscarriage. From our viewpoint we may consider that miscarriage or abortion is exactly the same as a pregnancy as far as the breast is concerned. It hypertrophies and produces milk.

The above is a definitely higher figure for miscarriage than that of the average normal. There are no accurate figures available on studies relating to miscarriage and abortion either in the average normal American woman, or in those having definite pathology relating to the pelvis. Every author admits there are no exact studies on this point, then proceeds to estimate what he thinks the figures would be.

Titus<sup>10</sup> in a study of the cases at the Johns Hopkins Hospital stated that 1 to 171/3 obstetrical cases ended in miscarriage (5.76 per cent). This figure is in striking contrast to our mammary cancer cases having 31 per cent ending in miscarriage or abortion.

<sup>10</sup> Titus: Am. Jour. Obst., Vol. 65, p. 960.

Hall<sup>11</sup> quotes Hagre as giving one miscarriage to every 8 to 10 labors, and Whitehead in England as one miscarriage to every seven labors.

Williams<sup>12</sup> stated that in his service between 8 and 10 per cent ended in abortion or miscarriage, that is, one in every ten or twelve.

### ONE HUNDRED CONTROL CASES

In making my study of the 100 control cases having no cancer, in order to compare with the 200 mammary cancer cases, no case was included under thirty-five years of age. These 100 cases could be considered normal American women. Their condition was either entirely normal, or they were under treatment for some condition other than mammary or pelvic. In order to get a more exact cross section of population, one-half were private cases and the other half were clinic patients.

In the study of the 100 cases one is struck by the complete lack of unusual incidents relating to the nursing history and to such incidents as abscess formation, inverted nipples, caked breasts, miscarriage, etc. The children were nursed for the normal period (six to nine months) without complications. This is in marked contrast with the cancer cases where these complications were such prominent and common features.

Of the 100 patients, 78 had borne 123 children; and there were only 18 miscarriages or abortions, which is one miscarriage to seven labors. This fits rather well into the impressions of Williams (1 in 10), Hagre (1 in 9) and Whitehead (1 in 7). In the cancer cases there was one miscarriage to every three labors. Therefore, there is a striking difference in the incidence of miscarriage of the control and the cancer cases, one being more than double the incidence of the other. This figure has an important bearing on the relationship of miscarriage to mammary cancer. Several factors of stagnation may be present in the same patient. This we found to be true in many instances; as an example, an inverted nipple may be present in a patient who has had three children and nursed but one of them; this same patient may have also had a miscarriage. The inverted nipple, the lack of nursing and the miscarriage make three factors dealing with impaired drainage.

In all probability, the most important part of the studies on drainage and stagnation was the work of Dr. Halsey Bagg of our Research Laboratory. It especially adds to the above clinical studies because he was able to artificially produce stagnation in animals and as a result, produce mammary cancer. Female mice<sup>13</sup> were "selected from a strain of animals with a well-known low rate of tumor incidence. Less than 5 per cent of females from this strain

produce mammary carcinoma when allowed to breed normally, and cancer of the breast does not appear in this small percentage until the animals are between one and a half and two years of age. Test animals from the above group were bred when very young and their litters removed immediately after birth and the mothers remated at the estrus that promptly follows parturition. In a second group various combinations were made of periods of suckling of one litter and non-suckling of the next litter, etc. In a third group mammary ducts were ligated at the nipples on one side of the body in order to produce artificial stasis of the mammary ducts. These animals were allowed to breed and suckle their young. Mammary cancers have developed in these animals by the various methods described.

"The clinical observations above are in line with laboratory experiments, wherein animals were allowed to breed very rapidly but were prevented from nursing their young. The females developed mammary carcinoma at a comparatively early age, and a histological study of their breast tissues showed a pronounced dilatation of the mammary ducts, which were filled with stagnating milk. The tumors were definitely malignant, grew rapidly, appeared at multiple foci, recurred after operation, and eventually killed their hosts. In a group of 15 animals, in which a condition of breast stagnation was produced by nontraumatic means, 13 females, or 87 per cent, developed mammary carcinoma. It was also found that when periods of suckling alternated with periods of non-suckling, cancer of the breast appeared in these animals after fewer consecutive pregnancies as compared with females that had had many litters, but had been prevented from nursing any of them. In the non-nursing group, prevention of suckling resulted in lack of normal development of the entire breast system; while in the other group there were periods at which the breasts were allowed to reach their normal limit of growth. It was in the latter group that cancer appeared after fewer consecutive litters.

"The ligation of mammary ducts in animals has been followed by carcinoma of the breast. This group of animals so far comprises few individuals, but, nevertheless, it is interesting to note that in the first animals tested, two of the operated females developed mammary tumors on the side of the body on which the ducts had been ligated. Histological examination showed them to be malignant, solid, mammary carcinoma associated with marked stagnation of the duct system on the ligated side of the body."

In the light of the foregoing studies of the 200 cancer cases, the 100 control cases and the experimental evidence, it strongly suggests that mammary cancer results from abnormal lactation and stagnation. The implication to clinicians is that normal nursing of infants for a normal period should be adhered to unless there are definite contra-indications.

### SUMMARY

A clinical study is made of 200 consecutive cases of cancer of the breast, particularly with

<sup>11</sup> Hall: Am. Jour. Obst., Vol. 55, p. 72.

<sup>12</sup> Williams, J. W.: Obstetrics. Appleton, 1931, p. 1157.

the idea of evaluating the various factors of breast drainage and stagnation. The stagnation theory of cancer development is explained. Consideration is given to such factors as caked breast, abscess of the breast, nipple trouble (tenderness and cracked nipple), nipple inversion, the presence of cysts, benign tumors and inflammatory lesions, miscarriages, etc. The functional activity of the breast is considered. Chemical analysis is made of the fluid and creamy material extracted from the breast by pumping. In these fluids are found both lactic and butyric acids. These acids are considered to be an important part of those irritating factors responsible for the tissue reactions resulting in hypertrophy, precancerous changes and eventually cancer. The breasts are pumped in order to abolish localized mastitis.

Only 8.5 per cent of the cases which developed mammary carcinoma gave a normal nursing history; or a history entirely free from the various developmental or accidental incidents leading to at least one and sometimes two, three, or more of the various factors causing impaired drainage. In this cancer group every third pregnancy ended in miscarriage or abortion, while in the control cases of 100 normal women, there was only one mis-

carriage or abortion for every 7 pregnancies. Twenty per cent of the cancer women bearing children nursed only a part of the children; 16 per cent did not nurse their children at all. Of the 78 mothers in the 100 control cases, 62, or 80 per cent, gave a normal history of nursing. This figure is in marked contrast to the figure of 8.5 per cent referred to in the foregoing, giving a normal nursing history in the cancer cases.

The clinical studies seem to fit the experimental studies of Bagg who produced artificial stagnation by breeding experiments and by ligating the nipples of the breasts. He found that his particular strain of laboratory mice spontaneously developed mammary cancer in 5 per cent of his animals; but under the influence of artificial stagnation he got as high as 87 per cent development of mammary cancer. The combined study of events in the 200 cancer cases, with the 100 normal control cases, fits well into the general scheme of the experimental production of mammary cancer. The theory although as yet unproven in the human, points out the various factors in the causation of mammary cancer; it also implies as a corollary, that the human should nurse her child unless there is some definite contraindication.

70 EAST 77TH ST.

## QUACKERY FLOURISHING IN THE DEPRESSION

While legitimate practitioners are hard hit by the business slump, the quacks enjoy an era of prosperity. "During such periods the tendency to establish unsound and dangerous methods of administering medical care is greatest," says Dr. R. G. Leland, Director of the Bureau of Medical Economics of the A. M. A.

An illustration of this is seen in Missouri, where the State Medical Association and the State Board of Health are uniting in a systematic attack on cancer quacks and false cancer cures. Two St. Louis doctors (not members of the Association) have been assessed heavy damages for treating a patient for so-called cancer by the application of a "paste." The case was tried before a jury, and the verdict, as reported in the Journal of the State Association, was unanimous. Several members testified that the paste was a futile effort to cure real cancer, though it might cure certain kinds of noncancerous tumors and sores. The tragic effects of this sort of treatment of true cancer, by delaying scientific treatment beyond the time when such treatment would cure the disease, was made plain to both the court and

what a frightful waste of life was wrought by such quackery and warned the public against medical fakirs.

The Missouri plan of campaign against quacks is interesting. It involves the cooperation of the State Board of Health, the State Medical Association, the local committee of the American Society for the Control of Cancer and the press to educate the people on the early symptoms of cancer and the necessity for consulting only reputable physicians who have the indorsement of the State Medical Association. As a preliminary movement the American Society for the Control of Cancer will conduct a survey of the state which will include not only collection of statistics on cancer fakirs and their unhappy victims but also make a thorough observation on all phases of cancer problems in Missouri. The results of this survey will enable the State Board of Health and co-operative agencies to establish a far-reaching campaign of public instruction that should and undoubtedly will cause cancer sufferers and those who think they have cancer to pause before allowing a self-advertised "cancer-specialist" to treat him and lead

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## EDITORIALS

### Putting Common Sense Into Workmen's Compensation

Certain abuses that have crept into the administration of the Workmen's Compensation Law are to be corrected, it is hoped, by drastic amendments proposed by the committee of ten physicians which has had the matter under consideration for nearly a year. They say that the present law has failed to protect the injured workmen against "notorious racketeer rings," and the amendments aim to give them full protection from that sort of rascality. No one who scans the suggested changes in the law can deny that they are filled with the spirit of common sense. That is what every law should be, of course, "codified common sense," and the proposals of the committee should go a long way toward righting the evils that have been the cause of complaint.

For example, the committee recommended that physicians who wish to enroll for compensation work must register their qualifications with the County Medical Society where they reside, and that the medical society or its board shall certify to the industrial commissioner the character of medical service the applicants are qualified to render. The commissioner shall then issue certificates of enrollment to the physicians sponsored by the county medical society, and the society may, if necessary, recommend the removal from the roll of "a physician whom it finds guilty of a breach of professional or ethical conduct, malpractice, professional incompetence, or any infraction of the provisions of this act."

What is more, the county medical societies are to be responsible for inspection of the compensation medical bureaus or clinics, and will make recommendations concerning the licensing of them. In this way responsibility "will be delegated in large part to the organized medical profession," as of course it should be.

Medical fees, says the committee, should be fixed by the commissioner in consultation with the Medical Society of the State of New York and with any other interested parties. "Undercutting, rebating, splitting or refunding of medical fees will be eliminated by making such practices illegal."

Another piece of common sense appears in the advice that "all obscure or difficult questions involving medical facts should be decided by physicians and not by lay judges," their decision upon the facts to be conclusive. It is also recommended that at least one member of the industrial board should be a physician.

Even if all its recommendations should be adopted, the committee advises that the operations of the new law be watched by a committee for two years "with a view to recommending correction of faults which may be revealed by subsequent experience."

There is not space here even to mention all the points in the report, or to go over the pros and cons of the disputed recommendation that injured workmen shall have the right to select their own physicians. The progress of the new legislation will be watched with the deepest concern by the many physicians in this state who wish to see our workman's compensation service raised to the highest plane of efficiency and justice, both to the victims of industrial injury and to the physicians who restore them to health and usefulness.

### Economics

Before the period of depression the belief of the average man was, that the theory of economics is largely confined to college courses, and the practical application to some government departments, large financial corporations, and collectors of industrial statistics. The same term has often dignified the relatively dilettante activities of smaller groups whose efforts were to search for remedies to control larger or smaller evils, now and then imaginary. The feeling was general that an economic survey would result in an obvious remedy if the task were properly done.

As the present period of financial stress became drawn out and people in all walks of life were affected by it to a greater or lesser

extent, the demand for economic studies of many conditions has become more insistent, with the hope that remedies will thus be made obvious. This trend affected the federal government in like manner, and in consequence such men as Irving Fisher, J. M. Keynes, George F. Warren, and Professor Cassel, all economists of unusual prominence, have been put to work on national finance. As a result, Cassel wishes a fixed gold standard with a control on the volume of credit, Fisher wishes a fluctuating gold content of the paper dollar, Keynes wishes a fluctuating value of gold itself, and Warren has not yet decided just what plan he considers best, but in the meantime it is said, puts the price of gold on a slip of paper each morning. The object of this review is not to criticize the effort but simply to show how a group of outstanding economic specialists are not only unable to agree on the matter of procedure but also have little in convincing arguments on the ultimate success or failure of the remedy.

Walter Lippmann recently said in the *Herald Tribune*, the belief that overproduction with consequent excess of everything, goods as well as human service, were the cause of depression, is an optical illusion; that in fact these are the result and not the cause, and difficult as it may be to believe, the proof can be found in economic history. Thus it is quite evident first, that most efficient economic study does not necessarily put a finger on the cause of an evil, and second, that such study does not necessarily prompt a remedy for the evil.

Financial stress more than all else is also the reason for the increasingly insistent demand for research in medical economics. County societies, state societies and the national bodies are besieged with demands from members to activate committees on economics and to devote medical meetings to the subject. Inaugural and valedictory addresses by the presidents of these societies are now mainly learned discourses on trends in medicine, economic status, and defense against real or imaginary spectres near-by or remote. Committees on economics vie with one another in their assiduous search for the malady and the remedy. The Committee on Economics of our Society compiled a classic report in 1932 of 163 items with 93 references to the literature, all on 20 closely printed pages of this JOURNAL. It was a detailed account demonstrating the complexity of the situation and the fact that no one remedy can cure the many evils. Still the demand is not satisfied, as well shown in a recent copy of the *Medical Alliance Review*, which states: "A new civilization is evolving under our eyes. We do

nothing. In its characteristic and cumbersome way, the County Society has yielded as much as it can. In the face of movement that is too bewildering, change that is too rapid, it stops dead in its tracks." In the same copy follow brief articles by Charles Gordon Heyd and Samuel J. Kopetzky clearly indicating the impending changes in the practice of medicine and the manner in which these may be met for the best interests of the profession as a whole.

While it is apparent that collectivism in one form or another has to a considerable extent already and is still further succeeding individual effort, in the main this applies largely to the prominent urban centres of our country which are after all but a minor part of the whole.

With no desire to belittle the influences which have and are still bringing about changes in medical practice, nor to detract from the significance and merit of proper study of these by men qualified for this work and the benefits these may achieve for the individual physician or the entire profession, nevertheless individual success remains as before the result of individual effort. No amount of economic study and no extent of solutions of existing evils determined in this way, will at the moment avail the individual who expects his medical society or the government to improve his status. Personal incentive to find a proper place in the existing order of things and to rise according to merit, always was and still is the method of success. This is done by knowledge and work and not by demands on a committee of economics or the cry to them for relief from existing evils.

A recent number of our JOURNAL refers to an extract from an article by Walter Lippmann so relevant and so true that a complete repetition is ventured. "I do not think it is possible to find an instance where a social order has been radically altered because someone thought some other kind of order would be better. There has to be a complete breakdown of the old order, a total paralysis, and an extinction of all hope that it can revive, before a genuine social revolution occurs. When these conditions do not exist, you may get a change of government, in moments of excitement even a violent change, but when the smoke clears away, you are pretty sure to find the essential institutions and habits of the nation the same." The true family doctor has for all time been the servant, counselor and friend of man. The social order may be upset and all men made equal thereby, but individual incentive will again lead to mastery in the final analysis of any scheme, and the

individual physician will again be servant, counsellor and friend.

not have any technocracy in medicine. Keep the man first, where he belongs.

## The Man Must Always Come First

When we analyze the instinctive feeling that surges up in every doctor's heart in opposition to state medicine, we can find pretty generally that he resents it because it is an attempt to put the institution above the man. Medicine is preeminently a calling where the man must always come first.

In a way, of course, this is true of all callings, true of all real progress. "The problems of the future will grow out of the present tendency to substitute the institution for the man," said a teacher in Alabama who had worked 20 years for a power company and then decided to go back to his old profession. "I have examined some 15 to 18 of the outstanding experiments throughout the world," he added, "attempts to substitute the institution for the man, and I can defend with success on any platform in America the thesis that in every case civilization has continued to grow only so long as the institution has been subordinated to the man. Our problem then is to return to that fine individualism in which man is paramount to the institution."

The relation between doctor and patient is one that can be institutionalized, it is true, but only to bring it down to a lower plane, only to rob it of its best qualities. There is no disputing the fact, of course, that we are living in a machine age and that a thousand things formerly made by hand are now turned out better by machinery. We even hear of churches with radio loud-speakers in the pulpit. But we have yet to hear of a dying church member who wanted a radio apparatus to hold his hand or a mother who wished her baby baptized by a gramophone. In life's critical and vital hours we want the human touch. When illness strikes down the father or mother or threatens the life of a little child, the family physician is the one who is wanted. Medical skill is needed, but something more is demanded too—the man behind the skill. It is just that impalpable something that cannot be supplied by any state institution or system. With it we have the splendid service that has made the old family doctor the hero of song and story. Without it we have a machine made system with all the efficiency of a Ford factory, perhaps, but lacking the human touch, the warm heart-beat, the sympathy that fills the patient with a new vigor and "doeth good like medicine." Not long ago we were all "steamed up" over the perils of technocracy, the domination of the machine. Let us

## Certification of Specialists

The rapid multiplication of specialists and the over-emphasis on specialization in medical practice have been due to several factors, not the least of which is that the public began asking who is a specialist before it thought to inquire what a specialist is. In view of the disproportionate number of teaching hours devoted to the specialties by the undergraduate schools, and the fact that the emoluments of an expert in one of the branches of medicine are usually greater than those of a general practitioner, it is not surprising that certain men have become specialists by pronouncement.

The term "specialist" implies that the physician so designated has had intensive training and wide experience in the field to which he limits his practice. The public, lay and medical, are entitled to know what particular qualifications he possesses and by what authority he classifies himself as such. The people at large also have a right to expect that the medical profession will safeguard them from the practices of pseudo specialists. The previously existing uncontrolled status of specialism could not have continued indefinitely. It was imperative that the medical profession fix the requirements for legitimate specialization and provide an acceptable plan for putting the stamp of approval on well qualified specialists. Otherwise the self-anointed reformers outside the profession might have devised drastic regulations to hamper organized medicine still further.

The American Board for Ophthalmic Examinations began to function in 1917, the American Board of Oto-Laryngology in 1926, the American Board of Obstetrics and Gynecology in 1930, and the American Board of Dermatology and Syphilology in 1932. Collectively, these boards have now examined and certified to the proficiency of nearly four thousand specialists. They are all endowed with an unassailable prestige, having been organized in each instance by the special National Societies and the corresponding Sections of the American Medical Association. At the present time groups of urologists, orthopedic surgeons, gastroenterologists, proctologists, pathologists, and pediatricians are considering plans for the creation of similar Boards. The objectives of all such examining Boards are educational and constructive, not legislative or restrictive. Their activities are devoted chiefly to encouraging and inducing potential specialists to prepare themselves thoroughly, to persuading



hospitals to provide adequate facilities for special training, to conducting examinations designed to test the qualifications of voluntary candidates for certification, and to granting certificates of proficiency to qualified applicants. The Boards are composed of elected representatives of the National Societies, personal favoritism and prejudice are completely eliminated, and the character of the examinations is such that no candidate need anticipate the slightest embarrassment.

Several of the National Societies have already made the possession of one of these certificates essential for membership, and some hospitals are accepting them as a standard for evaluating the capabilities of their staff members. What was originally a timid experiment has now become an irresistible movement, and the day of the incompetent self-styled specialist is numbered. There need be no fear of mushroom Boards, organized by independent groups. They could not survive the expense involved in their operation. It can be the function of the American Medical Association to certify the authenticity of the Boards; it is the business of the Boards to certify the specialists.

### Dr. Linsly Rudd Williams

A Tribute

THE passing of a physician who has stamped his work and his personality upon the community to an extent that calls forth the laudatory comment which has appeared in the lay press at the death of Dr. Linsly Williams is an event worthy of close attention by the medical profession. It is worth while that we should pause in our busy lives to study the career of such a man.

Dr. Williams received the usual educational training that pertains to all doctors. He spent his undergraduate years at Princeton University and then received his degree of Doctor of Medicine from the College of Physicians and Surgeons at Columbia University.

His internship at the Presbyterian Hospital brought him in contact with a group of men actively engaged in the practice of medicine and also interested in matters of education and public health. From these sources he received an impress which continued throughout his life.

As a practitioner, he proved himself capable, fine, helpful, and wise. He found in this field a peculiar delight and the clientele that he built up at that time remained his devoted friends.

He was blessed with wide vision and an urge to accomplishment. As the years progressed, he looked more and more upon the broader aspects of all that pertained to the healing of the sick. He associated himself with those who were like-minded. He was one of that small group who in 1911 organized the first formal activity of the New York

Academy of Medicine in public health under the able leadership of Dr. Charles L. Dana. Even during his absences from the city, Dr. Williams never lost contact with this group and in the last year of his life his work with the Committee on Public Health Relations of the Academy was among his major activities. So great was his success in this field that he attracted attention in many directions and became so strong a factor that when Dr. Herman Biggs under the revised health law became the first Commissioner of Health, in the State of New York, he turned to Dr. Williams for his first Deputy. During the years in which he served in this capacity, he became fully informed of the problems not only of public health in the State of New York, but those of medical education and private practice. He was known as a health officer of unusually fine perception and constructive ideas.

He terminated this service in order to fulfill what he considered his obligation in a larger field by going to France during the War. There as an army medical officer he proved his ability to meet any and all demands. A letter written during his last illness by a German, touchingly testifies to the debt of Germany for the work he did among German civilians while he was serving with the army of occupation in the sanitary corps. What he did there was of such an outstanding nature that he was called upon to remain for several years after the close of the War in order to help France in solving her problem connected with the tragedy of tuberculosis.

His interest and knowledge in medical educational matters were recognized by Columbia University where he was elected to the Board of Trustees, a position which he occupied for several years.

A review of this training and experience indicates that he was possessed of an unusual range of interests and abilities.

One of the conditions upon which the New York Academy of Medicine was enabled to obtain the necessary funds to move to its present home at 103rd Street and Fifth Avenue was that its affairs should be managed by a permanent, full-time, Director under the Trustees and Council. The Academy and the community, if not the nation, is the debtor of those who knew Linsly Williams and recognized in him the ideal person for this office. The varied training already cited made him a perfect administrator for such an undertaking. He knew the problems of the private practitioner. He had definite ideas concerning medical education based upon careful observation. He was a qualified expert in the field of public health and he possessed the intellectual vigor to weld these various phases into one coordinating whole.

During the exactly ten years that he guided the affairs of the Academy, he was a leader in the best sense of the word. No officer of the Academy is unaware of the fact that no matter what devotion and energy he may have



applied to his office, the leadership was always in the hands of Dr. Williams and it was rare indeed that any project toward progress was approached without its being learned that the Director had already formulated plans concerning it.

Under this influence, the Academy has come to be recognized as holding a unique position not only in its own community, but throughout the state, the country and even abroad. Dr. William H. Welch has repeatedly stated that it has no duplicate in the peculiar quality of service which it renders throughout the world. This is the monument that stands to the name of Linsly Williams.

His abundant energy would not permit him to confine his service solely to the field of medicine. He was a valued advisor to city, state, and national officials.

When the evils connected with the Veterans Bureau were brought to his attention, he devoted an enormous number of his already overcrowded hours toward aiding in the correction of these evils. He was prominent in all constructive action connected with the National Economy League in this particular endeavor.

It was not by any means solely due to Linsly Williams' education, training, and intellectual equipment that he was able to make such a great impress upon the life of his time. He possessed a genius for companionship and friendship. A clear thinker, a constructive organizer, he was more often than not sparing of his words in any discussion where controversial matters were at issue. Those who worked closely with him will remember the constant experience of having him sit quietly and listen to various opinions advanced, often with an approach of serious

opposing views, without contributing to the discussion. At the end, a short, succinct, definite statement from him would sum up the essentials of the entire matter and formulate a line of action enthusiastically accepted by all.

The many knotty problems which were brought to him arising out of that most difficult of human relations, clashes in personalities, were always handled with the skill of a true statesman, a name which was applied to him by the writer of one of the lay press editorials. He possessed that fine sense of humor which could always take the sting out of disturbing differences of opinion and bring the contestants into hearty accord. He never moved in any direction because of expediency. He formulated his policies after careful study. He asked cooperation to put them into effect and if he found that the time was not ripe for such a move, he waited for a more opportune day.

Were the material available, someone could render a real service in writing the biography of Linsly Williams showing the man as he was. The outstanding factors in his career, the end of which has left such an impress of bewildering loss upon us all, were a sound training for accumulating experience, a thoughtful, constructive utilization of experience for further progress, an unswerving adherence to principle, a kindly sense of humor, a strong tactful use of his abilities and a determination that he would devote such talents as a kindly Providence had bestowed upon him, to make the world in which he lived a brighter and happier one. In this thought lies the heart of the lesson which we may get from the life of our friend, Linsly Rudd Williams.

JOHN A. HANTWELL, M.D.

## The Annual Meeting of the State Society

THE next Annual Meeting of the Medical Society of the State of New York will be held in Utica on May 14th, 15th and 16th. There are many reasons why you should make a special effort to attend this meeting. There will be a discussion of your social relations, a practical presentation of scientific papers and an opportunity to meet with your fellow practitioners. At the Annual Meeting you will become rejuvenated and again enthusiastic about your life work.

Your Society is carrying on an immense work. Plan to visit the legislative body, the House of Delegates, as they deliberate over the vital problems concerning organized medicine. The delegates assemble on the 14th floor for an afternoon and evening session and again on the morning of the 15th.

Decide to enjoy and profit by the various

scientific presentations selected for you by Dr. William A. Groat of Syracuse, the Chairman of the Committee on Scientific Work, and his competent assistants, the chairmen of the various Sections. Papers will be read on the 15th and 16th.

There will be a Scientific Exhibit under the direct supervision of Dr. William F. Jacobs of Buffalo. Those of you who have visited previous Scientific Exhibits know their great value and we urge all who have not so profited to prepare their schedule so that they may have plenty of time to make a critical inspection of the numerous demonstrations which will be arranged for them at the next Annual Meeting.

The Chairman of the Committee on Arrangements, Dr. Andrew Sloan of Utica, has selected an active committee and you are assured of physical comfort during your stay in Utica.

**Plan to be in Utica May 14th, 15th and 16th.**

# Society News

## Report of the Committee on Workmen's Compensation

APPOINTED BY HIS EXCELLENCY,  
THE HONORABLE GOVERNOR HERBERT H. LEHMAN

**T**HE present Workmen's Compensation law is designed to protect the working man, when injured, by shifting part of the burden of industrial accidents from the industrial worker, who cannot support it, to the industry, which can bear the financial strain. At the same time it serves to protect the employers of labor from the burdens and occasional inequitable decisions of civil suits. Essentially, the present law requires the employer to provide prompt medical treatment for an injured employee for whatever period the injury demands and to pay him compensation for the duration of any disability lasting more than seven days.

The law has not worked to the benefit of the working man as well as had been anticipated. He often fails to obtain adequate medical care. Racketeering has become notorious. Unscrupulous and inefficient industrial clinics, not infrequently controlled by laymen or unethical physicians, are able to conspire within the law with unscrupulous employers and insurance carriers to obtain for themselves, by means of rebates, the privilege of treating injured workmen. Medical service rendered under these circumstances is usually inferior. In order to secure additional income and to cover the cost of the rebate or commission, treatment has been needlessly prolonged and bills for medical services have been excessive. The cost of insurance to the honest employer has been thereby increased and insurance carriers have been unable to estimate accurately the actuarial risk so that they have lost money on Workmen's Compensation insurance.

The abuses which have resulted under the present law may be subdivided into those over which the medical profession has at present no control and those directly attributable to the medical profession.

*Abuses over which the medical profession has at present no control.*

1. The hiring of cheap and incompetent medical service by employers and insurance carriers. This was one of the important disclosures of the Committee on Workmen's Compensation appointed by former Governor Roosevelt. The practice of cutting the rates for medical service below a reasonable minimum figure is indulged in by some of the insurance companies, commercial clinics, and even by the State Insurance Fund. The effort to secure the cheapest possible medical

service has been responsible for such medical incompetence, padding of bills, prolongation of treatments and rebating.

2. Reduced charges by hospitals in order to obtain cases.

Hospitals which accept compensation cases at a per diem rate which is less than the actual cost of hospitalization meet the loss by diverting funds which have been given for philanthropic purposes.

3. "Lifting."

Lifting of cases during the course of treatment has been practiced by some insurance companies and self insurers, in order to transfer the patient to a cheaper or more favored physician or hospital and, not infrequently, in order to secure more favorable testimony at subsequent hearings before the Department of Labor. Not only ambulatory patients but also those hospitalized in competent hospitals have been transferred at considerable risk to the patient.

4. Errors in causal relationship.

a. Carriers have frequently attempted to prove wrongly that patients were malingering or that the injury did not result from their occupation. This injustice has been most flagrant when carriers have been direct employers of the physicians.

b. In occasional instances, diseases which have occurred three or more years after an injury have been wrongly attributed to the injury or occupation. Awards have been made by lay referees for tuberculosis, senile conditions, cardiorenal disease, neurological conditions, and cancer, which had no relationship to the antecedent injury or occupation.

c. The ultimate decision concerning causal relationship and compensation is made by a lay referee listening to opposing medical testimony of experts employed by the interested parties. He must evaluate this highly technical evidence without sufficient knowledge, and, as a result, injustices frequently occur. These errors are especially frequent in the fields of specialization—particularly the eye, ear and central nervous system. Unjust decisions are also common in cases of death or total disability.

5. Postponement of compensation awards.

Frequent delays occur both in the hearing of cases and in the granting of compensation,

even when the injured working man is in financial distress.

#### 6. Other legal injustices.

The injured workman who believes that he has not received proper medical treatment or a fair award of compensation is placed in an unfair position by the fact that his most important witness, the physician who has treated him, is engaged and is paid by the employer or insurance carrier. Also, the medical records are in the possession of the employer or carrier, who can afford to be represented by counsel and by paid medical experts. The impartial attitude of the referee does not compensate the injured workman for these disadvantages.

#### Abuses due to the medical profession.

##### 1. Inefficient medical treatment.

Despite the fact that the majority of injuries are of minor nature and can be treated competently by the general practitioner, severely injured working men who should have been referred to a surgeon or specialist have at times been treated by physicians insufficiently trained in traumatic surgery.

##### 2. Over-treatment and over-charging.

Some physicians have seen patients more frequently than the injury required, and have rendered bills which were much higher than the treatment warranted.

##### 3. Prolongation of period of compensation.

Physicians have occasionally conspired with the injured working man to obtain compensation for him for a longer period than his injury warranted.

##### 4. Prolonged physical therapy.

Treatment is commonly given without medical supervision by untrained nurses or assistants. It is often unnecessarily prolonged. The working man is delayed from returning to his normal occupation, and compensation as well as medical costs are thereby increased.

##### 5. Inadequate medical testimony.

Cases are too often postponed without medical testimony having been taken. This is due to the fact that physicians are often subpoenaed to testify at compensation hearings without remuneration and at times that interfere with their professional work. Moreover, they are often resentful and their testimony is therefore perfunctory and inadequate.

##### 6. Medical advertising and racketeering in order to secure cases.

These practices are resorted to by some unethical physicians and compensation clinics controlled by laymen or by unscrupulous physicians. We shall refer to such clinics as Compensation Medical Bureaus.

The following excerpts are from the report of Frances Perkins, former industrial commissioner of the State of New York:

"Conspicuous is the practice of intensive solicitation for the 'business' of treating claimants. Many clinics employ advertising distributors to canvass employers and post on the employers' premises cards that are obviously designed to convey some official

connection with the 'workmen's compensation.' In addition, some of the clinics offer employers first-aid kits as an inducement for patronage.

"Competitive rivalry between clinics frequently results in attempted 'lifting' of cases and there is indication that this competition is carried on even to the extent of offering inducements to the injured claimants.

"Some of the clinics are inadequately equipped and are maintained in a slovenly manner.

"Many, especially those of the chain variety, are staffed by low-salaried physicians and by so-called 'nurses' with little or no training. Instances have been shown where these non-professional attendants actually give treatments and so forth in the absence of the physician though, perhaps, legally under the latter's direction.

"There is reason to believe that in numerous instances treatments are prolonged for the sole benefit of the clinics, although claimants may benefit through certification of disability by the clinic.

"Some of the facts develop the possibility of connivance between employers and clinics whereby the latter may return in some form and extend a part of the money collected from carriers through treatment of injured cases."

These and other abuses of the law have been repeatedly revealed by committees of the Labor Department, the Bar Association, the Special Committee on Workmen's Compensation appointed by former Governor Roosevelt, and they have been confirmed by the investigations of this committee. We therefore recommend that the Workmen's Compensation Law be revised in the following respects in the interests of the injured workmen, the conscientious employer of labor, the insurance carriers, and the medical profession.

#### Recommendations

Recommendations 1 to 6 are designed to regulate medical practice under this act so as to provide more adequate medical and surgical care for the injured workmen and to eliminate the many evils of the present law. Recommendations 7 and 8 define the medical activities of the insurance carriers. Recommendations 9 to 12 are concerned with improvements in compensation procedure.

Accompanying this report is a tentative draft of the revised provisions of the Workmen's Compensation Act, as proposed by this Committee.

##### 1. Limited Free Choice of Physician by the Employee.

It is the opinion of your Committee that the principal abuses as they affect the workmen are due primarily to the manner in which medical service is at present provided, and that they can be corrected only by granting the injured workman the right to choose a

# Society News

## Report of the Committee on Workmen's Compensation

APPOINTED BY HIS EXCELLENCY,  
THE HONORABLE GOVERNOR HERBERT H. LEHMAN

**T**HE present Workmen's Compensation law is designed to protect the working man, when injured, by shifting part of the burden of industrial accidents from the industrial worker, who cannot support it, to the industry, which can bear the financial strain. At the same time it serves to protect the employers of labor from the burdens and occasional inequitable decisions of civil suits. Essentially, the present law requires the employer to provide prompt medical treatment for an injured employee for whatever period the injury demands and to pay him compensation for the duration of any disability lasting more than seven days.

The law has not worked to the benefit of the working man as well as had been anticipated. He often fails to obtain adequate medical care. Racketeering has become notorious. Unscrupulous and inefficient industrial clinics, not infrequently controlled by laymen or unethical physicians, are able to conspire within the law with unscrupulous employers and insurance carriers to obtain for themselves, by means of rebates, the privilege of treating injured workmen. Medical service rendered under these circumstances is usually inferior. In order to secure additional income and to cover the cost of the rebate or commission, treatment has been needlessly prolonged and bills for medical services have been excessive. The cost of insurance to the honest employer has been thereby increased and insurance carriers have been unable to estimate accurately the actuarial risk so that they have lost money on Workmen's Compensation insurance.

The abuses which have resulted under the present law may be subdivided into those over which the medical profession has at present no control and those directly attributable to the medical profession.

*Abuses over which the medical profession has at present no control.*

1. The hiring of cheap and incompetent medical service by employers and insurance carriers. This was one of the important disclosures of the Committee on Workmen's Compensation appointed by former Governor Roosevelt. The practice of cutting the rates for medical service below a reasonable minimum figure is indulged in by some of the insurance companies, commercial clinics, and even by the State Insurance Fund. The effort to secure the cheapest possible medical

service has been responsible for such medical incompetence, padding of bills, prolongation of treatments and rebating.

2. Reduced charges by hospitals in order to obtain cases.

Hospitals which accept compensation cases at a per diem rate which is less than the actual cost of hospitalization meet the loss by diverting funds which have been given for philanthropic purposes.

3. "Lifting."

Lifting of cases during the course of treatment has been practiced by some insurance companies and self insurers, in order to transfer the patient to a cheaper or more favored physician or hospital and, not infrequently, in order to secure more favorable testimony at subsequent hearings before the Department of Labor. Not only ambulatory patients but also those hospitalized in competent hospitals have been transferred at considerable risk to the patient.

4. Errors in causal relationship.

a. Carriers have frequently attempted to prove wrongly that patients were malingering or that the injury did not result from their occupation. This injustice has been most flagrant when carriers have been direct employers of the physicians.

b. In occasional instances, diseases which have occurred three or more years after an injury have been wrongly attributed to the injury or occupation. Awards have been made by lay referees for tuberculosis, senile conditions, cardiorenal disease, neurological conditions, and cancer, which had no relationship to the antecedent injury or occupation.

c. The ultimate decision concerning causal relationship and compensation is made by a lay referee listening to opposing medical testimony of experts employed by the interested parties. He must evaluate this highly technical evidence without sufficient knowledge, and, as a result, injustices frequently occur. These errors are especially frequent in the fields of specialization—particularly the eye, ear and central nervous system. Unjust decisions are also common in cases of death or total disability.

5. Postponement of compensation awards.

Frequent delays occur both in the hearing of cases and in the granting of compensation,

for injuries and illnesses arising out of industry, except for emergencies.

Infractions of the education law will be referred by a county medical society or by the commissioner to the Committee on Grievances, constituted under 51265 of the Education Law.

The county medical societies or boards designated by them are also to be responsible for inspection of compensation medical bureaus (formerly called compensation clinics) and for making recommendations to the commissioner concerning the licensing of these medical bureaus.

In this manner, the responsibility for maintaining proper standards of professional conduct and professional competence will be delegated in large part to the organized medical profession. The injured workman will be limited in his choice to physicians capable of treating him for his particular disability, the employers and insurance carriers will be protected against professional abuses, and unscrupulous or incompetent clinics will be eradicated.

#### 5. Standardization of Medical Fees.

Medical fees for various types of industrial accidents and illnesses are to be fixed for the State by the commissioner, after he has requested the Medical Society of the State of New York to submit a schedule of fees which it deems fair and adequate and has given other interested parties an opportunity to express their views. These fees are to apply as minimums to all physicians treating compensation cases, whether chosen by the employee or by the employer. A similar schedule of medical fees was established in New York City within the past two years by agreement between the National Bureau of Casualty and Surety Underwriters and the county societies and has been mutually satisfactory.

Undercutting, rebating, splitting or refunding of medical fees will be eliminated by making such practices illegal. Advertising or soliciting medical work under this act will be punishable as a misdemeanor.

#### 6. Arbitration of Disputed Bills for Medical Services.

Disputed bills for medical services are to be submitted for adjustment to an arbitration committee of four representing the employer or carrier and the physician. A majority vote of the committee is to be conclusive. In the event of equal division, the committee shall choose a single arbiter whose decision will be conclusive.

A similar practice was instituted voluntarily two years ago by the National Bureau of Casualty and Surety Underwriters and the Medical Societies of the Counties of New York, the Bronx and Kings and has been mutually satisfactory. To date about one thousand and contested bills have been referred for arbitration, of which almost five hundred were settled by mutual agreement before the hearing. Every one of the remaining five hundred cases were settled by unanimous agreement of

the arbitration committee and the decision was accepted by both parties in all but one instance.

#### 7. Elimination of Medical Practice by Insurance Carriers.

The investigation indicates that some insurance carriers and even the State Insurance Fund have been guilty of the practice of attempting to provide unduly cheap medical care by undercutting and underbidding. Unnecessary lifting of cases and a bureaucratic relationship to injured workmen and physicians have aroused much criticism.

The medical activity of the State Insurance Fund and of all insurance carriers except self insured employers should be limited to the maintenance of a staff of competent medical inspectors to examine compensation cases periodically while under medical or surgical treatment and to report upon the adequacy of the medical care and other matters relative to the medical conduct of the case. It is also recommended that the medical and claims departments of the State Fund and of all insurance carriers be separate.

#### 8. Self-Insurers.

Among large employers of labor who are self-insurers (those who maintain their own medical organization and set up adequate financial reserves under the law to meet disability obligations) the medical care provided for the injured employee is usually good. But abuses exist even among self-insurers. This has been disclosed by the recent revelations involving one of the largest of the self-insurers, the municipality of the City of New York. Furthermore, an injured employee who may have reason to believe that he is not receiving adequate care from a self-insured employer can file a complaint with the Labor Department only at the risk of losing his job. And his chances of proving the inadequacy of medical care are reduced by the fact that the medical records are in the possession of the defendant who can afford to be represented by counsel, and that the most important witness, the physician who treated him, is in the employ of the self-insurer.

Under the proposed amendments to this act, employers who are self-insurers may maintain a licensed compensation bureau but an injured employee is not obligated to use it and may choose his own medical attendant if he desires, subject only to the limitations described in paragraphs 2 and 3 of this report. If the self-insurer maintains an efficient staff, the injured workman will find it advantageous to continue to use the medical service provided by his employer.

#### 9. Determination of Disability.

The lay referees of the Department of Labor now render decisions upon medical matters including causal relationship. Although a medical staff is employed by the labor department, its opinions may be accepted or ignored by the referee. An appeal from his decisions even on medical matters is reviewed

at present by the Industrial Board, all members of which are laymen. The following changes in procedure are therefore provided in the proposed new law.

The primary determination of disability, the degree or percentage of disability and questions of causal relationship will remain the duty of the referees (or the Industrial Board) but when in doubt the referee will have the right to avail himself of the opinion of an impartial expert or, if he disagrees with the decision of the impartial expert, to refer the case for decision on medical grounds to a Medical Advisory and Appeal Board. On all other grounds the appeal will be taken to the Industrial Board.

#### *10. Medical Advisory and Appeal Board.*

We urge that all obscure or difficult questions involving medical facts should be decided by physicians and not by lay judges. A Medical Advisory and Appeal Board (or Boards) of three physicians is therefore to be appointed for each compensation district of the State by the industrial commissioner from nine nominations made jointly by the county medical societies of the district. This board is to act upon appeals referred to it by referees or requested by either litigant upon medical facts including causal relationship, the determination of disability and the degree or percentage of disability. The decision of the board upon these facts is to be conclusive. The board may avail itself of the opinion of a qualified impartial expert. Provision is also made for appointment of the Medical Advisory and Appeal Boards by the commissioner in the event that a county medical society should fail to make nominations within a reasonable time.

#### *11. Industrial Board.*

As the work of the Industrial Board is to some extent concerned with medical problems, it is recommended that at least one of its members be a physician.

#### *12. Other Changes in Compensation Procedure.*

Other changes in procedure include:

1. Punishment for rebating, splitting or refunding of fees and for soliciting or advertising for work, practices which have been responsible for much of the racketeering.

2. Provision for the licensing, inspection and regulation of compensation medical bureaus, previously called compensation clinics.

3. Regulations governing the care of workmen's compensation cases in municipal, county and state hospitals.

4. Regulation requiring a physician to send a preliminary notice to the employer and to the Labor Department within 48 hours after he begins treatment of a case and a more complete report within twenty days thereafter.

5. Regulations expediting hearings before referees and reducing the frequency of postponements.

The Committee is convinced, as were its

predecessors in the investigation of the operation of the workmen's compensation law, that the present law should be altered. The proposed changes in the law which we now submit represent the opinion of the Committee after study of the old law and its operation. The Committee believes that the changes should result in the elimination of many of the faults in the present law. It recommends, however, that a committee be appointed for a period of two years to observe the operation of the revised law with a view to recommending correction of faults which may be revealed by subsequent experience.

#### **Medical Aid Amendments to the Workmen's Compensation Act**

##### *Recommended by the Committee*

1. (a) The employer shall be liable for the payment of the expenses of medical, surgical, or other attendance or treatment, nurse and hospital service, medicine, crutches and apparatus necessitated by the injury of an employee, for such period as the nature of the injury or the process of recovery may require. All fees and other charges for such treatment and services shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living. The commissioner shall prepare a schedule for the State of minimum charges and fees to be determined in accordance with and to be subject to change pursuant to rules promulgated by the commissioner. Before preparing such schedule for the State the commissioner shall request the president of the Medical Society of the State of New York to submit to him a report on the amount of compensation deemed by such society to be fair and adequate for the types of medical care to be rendered under this act, but consideration shall be given to the views of other interested parties. The amounts payable by the employer for such treatment and services shall in no case be less than the fees and charges established by such schedule. Nothing in this schedule, however, shall prevent payment of amounts higher than the fees and charges fixed therein.

- (b) The liability of an employer for the expenses for treatment and services herein provided shall not be affected by the fact that his employee was injured through the fault or negligence of a third party not in the same employ, unless and until notice of election by the employee to sue or the bringing of suit against such third party. The employer shall, however, have an additional cause of action against such third party to recover any amounts paid by him for such treatment or services.

- (c) The referee, the Industrial Board or the Medical Advisory and Appeal Board hearing a claim for compensation may require examination of any claimant by a physician especially qualified with respect to the diagnosis or treatment of the disability for which compensation is claimed; and may require a re-

port from such physician on the diagnosis, proper treatment, or extent of the disability of such claimant. The physician to conduct such examination shall be designated by the commissioner from a panel of especially qualified physicians submitted to him by the medical society of the county. The industrial commissioner shall direct the award for such services.

2. (a) An injured employee may, when care is required, select to treat him any physician authorized by the commissioner to render medical care, as hereafter provided. If the employee is unable or does not desire to select a physician, the employer shall promptly provide him with the necessary medical care.

(b) The commissioner shall prescribe the form of a notice informing employees of their privilege under this section, and such notice shall be posted and maintained by the employer in a conspicuous place or places in and about his place or places of business.

(c) The employer shall have the right to transfer the care of an injured employee from the attending physician, whether chosen originally by the employee or by the employer, to another enrolled physician (1) if the interest of the injured employee necessitates the transfer or (2) if the physician has not been authorized to treat injured employees under this act or (3) if he has not been authorized under this act to treat the particular injury or condition. An enrolled physician from whom the care has been transferred shall have the right of appeal to an arbitration committee as provided in paragraph b of subdivision 7 and if said arbitration committee finds that the transfer was not authorized by this section, said employer shall pay to the physician a sum equal to the total fee earned by the physician to whom the care of the injured employee has been transferred, or such proportion of said fee as the arbitration committee shall deem adequate.

(d) No claim for medical or surgical treatment shall be valid and enforceable, as against such employer, unless within forty-eight hours following the first treatment the physician giving such treatment furnish to the employer and the industrial commissioner a preliminary notice of such injury and treatment, and within twenty days thereafter a more complete report on a form prescribed by the industrial commissioner. The industrial board may excuse the failure to give such notices within the designated periods when it finds it to be in the interest of justice to do so. Upon receipt of the notice herein provided the employer or the carrier shall be entitled to have the claimant examined by a qualified physician at a place reasonably convenient to the claimant and in the presence of the claimant's physician, and refusal by the claimant to submit to such examination at such time or times as may reasonably be necessary to safeguard the interests of the employers or carrier, shall bar the claimant from recovering compensation

for any period during which he has refused to submit to such examination.

(e) No claim for specialist consultations, surgical operations, x-ray examinations, special diagnostic laboratory tests or physiotherapeutic procedures costing more than \$10.00 shall be valid and enforceable, as against such employer, unless such special services shall have been authorized by the employer or by the commissioner, or unless such authorization shall have been unreasonably withheld, or unless such special services were required in an emergency in which delay for the purpose of securing authorization might prejudice the patient's chances of recovery or result in an increase in his disability.

3. (a) The commissioner shall upon the recommendation of the medical society of each county or of a board designated by such county society authorize physicians licensed to practice medicine in the state of New York to render medical care under this act. If, within sixty days after the commissioner requests such recommendations, the medical society of any county fails to act, or if there is no such society in a county, the commissioner shall designate a board of three qualified physicians, members of the medical society of the state of New York, who shall make the requested recommendations. No such authorization shall be made in the absence of recommendation of the appropriate society or board. No person shall render medical care under this act without such authorization of the commissioner. Provided, that (1) emergency (first aid) medical care may be rendered under this act by any physician licensed to practice medicine in the state of New York without authorization by the commissioner under this section; and

(2) a licensed physician who is a member of a constituted medical staff of any hospital may render medical care under this act while an injured employee remains a patient in such hospital; and

(3) under the active and personal supervision of an authorized physician medical care may be rendered by a registered nurse, physio-therapist or other person trained in laboratory or diagnostic techniques within the scope of such persons' specialized training and qualifications. This supervision shall be evidenced by signed records of instructions for treatment and signed records of the patient's condition and progress. Reports of such treatment and supervision shall be made by such physician to the commissioner on such forms and at such times as the commissioner may require.

(b) A person licensed to practice medicine in the State of New York who is desirous of being authorized to render medical care under this act, shall file with the medical society in the county in which his office is located or with a board designated by such society or by the commissioner, an application for authorization under this act. In such

shall state his training and qualifications and shall agree to limit his professional activities under this act to such medical care as his experience and training qualify him to render. The medical society or a board designated by it, if it deems such licensed physician duly qualified, shall recommend to the commissioner that such physician be authorized to render medical care under this act, and such recommendation and authorization shall specify the character of the medical care which such physician is qualified and authorized to render under this act. A licensed physician may present to the medical society or board evidences of additional qualifications at any time subsequent to his original application.

(c) Laboratories and bureaus engaged in physiotherapy, x-ray and other diagnostic or therapeutic procedures and which participate in the diagnosis or treatment of injured workmen under this act shall be owned and operated by qualified physicians duly authorized under this act.

4. (a) The medical society or board that has recommended the authorization of physicians to render medical care under this act shall investigate all charges of professional or other misconduct by any authorized physician or by any compensation bureau licensed as hereafter provided, and shall report evidence of such misconduct to the commissioner. Such investigation may be made by the board of an adjoining county upon the request of the medical society of the county in which the alleged misconduct or infraction of the act occurred.

(b) The commissioner shall remove from the list of physicians authorized to render medical care under this act the name of any physician who

(1) has been guilty of professional or other misconduct or incompetency in connection with medical services rendered under this act; or

(2) has exceeded the limits of his professional competence in rendering medical care under this act or has made materially false statements concerning his qualifications in his application for the recommendation of the medical society in the county in which his office is located, or of the board designated by it; or

(3) has failed to submit full and truthful reports required to be made by him to the commissioner; or

(4) has rendered medical services under this act for a fee less than that fixed by the commissioner as the minimum rate in his community; or

(5) has participated in the division, transference, assignment, rebating, splitting or refunding of a fee for medical care under this act; or

(6) has solicited, or has employed another to solicit, for himself or for another the professional treatment, examination or care of

an injured employee in connection with any claim under this chapter.

(c) Nothing in this section shall be construed as limiting in any respect the power or duty of the commissioner to investigate instances of misconduct, either before or after investigation by a medical society or board as herein provided, or to evoke the authorization of any physician or the license of any compensation medical bureau that he may determine to be guilty of such misconduct.

5. (a) The commissioner may, upon the recommendation of the medical society of each county or of a board designated by such county society, authorize and license compensation medical bureaus, maintained by qualified physicians wholly or principally for the diagnosis and treatment of industrial injuries or illnesses to render medical care under this act. Application for such authorization shall be made on forms to be furnished by the commissioner and shall disclose in full the nature of the personnel and equipment of such bureaus. No such authorization shall be made in the absence of recommendation from the appropriate society or board. Each such bureau which receives such authorization shall:

(1) Make reports on its personnel and equipment in such form and at such times as may be required by the commissioner; and

(2) be subject to inspection by the commissioner or the medical society of the county in which such bureau is located; and

(3) pay to the commissioner a license fee of twenty-five dollars per annum for each compensation bureau. The fees so collected shall be used for defraying the expense of licensing and inspecting such bureaus.

(b) The commissioner shall revoke the license of any compensation medical bureau upon finding that such bureau has been guilty of professional or other misconduct or of violation of the provisions of this act or that the personnel of such bureau is not properly qualified under this act or that the equipment of such bureau is inadequate for the proper rendering of medical care.

6. (a) Fees for medical services shall be payable only to a physician or other lawfully qualified person permitted by section 3 of this chapter to render medical care under this act, or to the agent or to the executor or administrator of the estate of such physician. Hospitals shall not be entitled to receive the remuneration paid to physicians on their staff for medical and surgical services.

7. (a) Unless within thirty days after a bill has been rendered to the employer by the physician or hospital which has treated an injured employee, such employer shall have notified the commissioner and such physician or hospital in writing that such employer demands an impartial examination of the fairness of the amount claimed by such physician or hospital for his or its services, the right to such an impartial examination shall be deemed to be waived and the amount claimed by such



physician shall be deemed to be the fair value of the services rendered by him.

(b) If the parties fail to agree as to the value of medical services rendered under this act such value shall be decided by an arbitration committee consisting of two physicians designated by the president of the medical society of the county in which the claimant resides and two physicians also members of the Medical Society of the State of New York appointed by the employer or carrier. The majority decision of the arbitration committee shall be conclusive upon the parties as to the value of the services rendered, unless grossly excessive or inadequate or procured by fraud. In the event of equal division, the committee shall select a fifth physician, also a member of the Medical Society of the State of New York whose decision shall be conclusive.

(c) The parties to arbitration proceedings under this section shall each pay to the commissioner a sum equal to five percent of the award, or a minimum of two dollars. From sums so collected the commissioner shall pay to each member of the arbitration committee a per diem fee of ten dollars.

8. (a) Hospitals maintained wholly by public taxation may treat only emergency cases under this act, and may treat such emergency cases only so long as the emergency exists. This section shall not be applicable where there is not available a hospital other than a hospital maintained by taxation, nor shall it prevent any municipal, county or state hospital from rendering medical services to employees of such hospital.

9. Any person who shall make it a business to solicit employment for any person authorized by this act to render medical care to an injured employee in connection with any claim under this act, shall be guilty of a misdemeanor, except that the employer shall have the right, subject to regulations prescribed by the commissioner, to recommend to the injured employee the names of enrolled physicians who he believes to be competent to treat him.

10. (a) The primary determination of temporary partial, temporary total, permanent partial and permanent total disability and of the degree or percentage of partial disability and the primary determination of causal relationship of the disability to an injury or occupation, shall be the duty of the referee sitting in the case. When in doubt he may call an impartial medical expert specially qualified in the subject matter of the case as provided in paragraph c, subdivision 1, or he may refer the case for decision to the Medical Advisory and Appeal Board.

(b) In the end result after accident or accidents the following shall be used as a general guide for the determination of the degree of disability:

1. Function, or capacity to perform
2. Union, or state of repair of parts injured

3. Contour, or external appearance, including the presence or absence of facial or other disfigurements.

(c) A Medical Advisory and Appeal Board or Boards of three physicians shall be appointed for each compensation district of the State by the commissioner from a list of not less than nine physicians nominated jointly by the county medical societies of such district. When appeals in a given district are too numerous for a single board to adjudicate, two or more boards may be designated. When the county medical societies fail to make nominations for membership on the Medical Advisory and Appeal Board within sixty days after the commissioner requests such nominations, the commissioner shall appoint three qualified physicians to serve as the members of the board.

Referees may refer cases to the Medical Advisory and Appeal Board for the determination of disability or of causal relationship as provided in paragraph (a) of this subdivision. The Medical Advisory and Appeal Boards shall also hear all appeals from the decision of referees which involve (1) the determination of disability, (2) the determination of the degree or percentage of disability, (3) the determination of causal relationship of abnormal physical conditions arising out of employment, and (4) the determination of alleged prejudice with respect to immediate or ultimate result from failure to provide treatment for an employee by an employer or failure to accept treatment by the employee. The majority decision of the Board shall be conclusive.

The Medical Advisory and Appeal Boards shall not review cases in which a referee has referred the case to a specially qualified physician under paragraph (c) subdivision (1) and has made a decision in accordance with the findings and report of such physician.

(d) The commissioner shall pay to each member of the Medical Advisory and Appeal Board a per diem fee of twenty dollars and the expenses of transportation.

(e) The county medical societies shall be entitled to reimbursement by the commissioner for secretarial expenses incurred in (1) registration or enrollment of physicians under this act, (2) the investigation of charges filed against physicians under this act, (3) the inspection of compensation medical bureaus, (4) the activities of the arbitration committee, (5) the activities of the Medical Advisory and Appeal Boards and (6) other duties necessitated by this act.

11. (a) No physician, even if employed by the Department of Labor, can serve both as a witness and as advisor to the commissioner or referee at a hearing.

(b) Whenever his attendance at a hearing is required by a referee or by the Medical Advisory and Appeal Board, the physician of the injured employee shall be entitled to receive a fee of five dollars from the employer.

12. (a) An insurance carrier other than a self insured employer shall not participate in the treatment of injured workmen except that it may employ medical inspectors to examine compensation cases periodically while under treatment and report upon the adequacy of medical care and other matters relative to the medical conduct of the case.

(b) A self insured employer may maintain a compensation medical bureau at the place or places of employment if such bureau is required because of the nature of the industrial hazards or the frequency of injuries to

employees arising out of industry. Such bureau or bureaus shall be authorized and licensed pursuant to subdivision 5, and their use by an injured employee shall be optional in accordance with the provisions of paragraph (a) of subdivision 2.

*Committee—Eugene H. Pool, M.D., Chairman; George Bachr, M.D., Secretary.*

*Frederick W. Bancroft, M.D., David J. Kaliski, M.D., Adrian V. S. Lamber, M.D., Thomas A. McGoldrick, M.D., Charles A. McKendree, M.D., Frederick M. Miller, Sr., M. D., Harry R. Trick, M.D., Frederick S. Wetherell, M.D.*

## Committee on Public Health and Medical Education

### Graduate Education

THE Committee announces a course on Dermatology in Onondaga County to start on January 11th.

Particular attention is called to a new course of lectures on Orthopedic Surgery. This course will consist of six lectures from a list of twelve practical phases. It should prove of special interest to those Counties where objections have been raised to the care of Orthopedic cases by the State Department of Health. Information can be obtained by writing to the Chairman, Dr. Thomas P. Farmer, 608 East Genesee St., Syracuse, N. Y.

### New Member of the Committee

The vacancy caused by the sad and untimely death of Dr. Nellis B. Foster has been filled by appointment of Dr. Russell L. Cecil of New York City.

### Malnutrition of Children Among Families Under Welfare Relief

The Committee views with deep concern the possibility that in the families who are on welfare relief the children may be seriously undernourished. Such a condition, pitiable in childhood, or even tragic, implies a potential handicap for the future adult. Therefore the Committee has given thorough consideration to the matter. Conferences have been held with Commissioner Parran and Dr. H. L. K. Shaw of Albany; and, finally, a recommendation was presented to the Executive Committee that the State Society sponsor surveys of actual conditions in a few special districts in order to determine to what extent such malnutrition may in fact exist.

While the work can be best conducted as a joint activity of a County Society and the State Department of Health, it is imperative that the Chairmen of local Public Health Committees, who may be involved, shall direct the surveys. Further advice on this subject will be issued.

### Public Health Plus Medical Education

This Committee, as its title indicates, is charged with a double duty.

Most happily has this twofold purpose been realized in the following presentation from

Monroe County, which was prepared at the instance of this Committee.

It is clearly to be seen, therein, that aggressive and sustained action by an enlightened County Society, in the effort to better public health, necessarily brings in graduate medical education.

This Committee commends most highly the Monroe County work so well described by Dr. Whipple.

### An Effort in Graduate Education by the Public Health and Graduate Education Committees of the Medical Society of the County of Monroe

FOUR years ago the Public Health Committee of the Medical Society of the County of Monroe was reorganized into an active committee with a chairman and twelve members. Three were members-at-large and nine became chairmen of subcommittees.

The motive prompting the activities of this committee was the belief that organized medicine should assume leadership in local health activities and that this Society could coordinate these activities in the interest of efficiency. A full report of results will be made at a later date; but it is believed that results already obtained prove the energy well expended from the standpoint of both the Society and the public.

After three years of active interest on the part of nine subcommittees it was apparent that the public was aware of an attempt to give them truth in medicine through broadcasting and lectures. A sound health-mindedness has resulted. The social agencies interested in health work have increasingly sought advice and counsel of the Society. The official health agency, the Health Bureau, through its health officer, has felt the benefit of advice. Close co-operation has been advantageous and very mutual. An increased interest in the work of the local tuberculosis sanitarium and a more understanding relationship between the staff and physicians of the committee now exist. Through the efforts of the committees it is believed that the Society membership has learned to think and act as a society rather than as individuals. All have been brought in closer contact with national and local tubercu-

losis, heart, cancer and social hygiene groups, better appreciating the magnitude of the efforts in disease prevention.

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General discussion followed, led by the Director of the Division of Tuberculosis of the State Department of Health. At the close of the meeting each physician present was given a printed bound copy of the papers presented in the symposium and later a copy was sent to every member of the County Society not present. This was done as a committee effort and no names appeared in the printed copy of papers. There was presented in the Academy at the time of the meeting an exhibit of x-ray films from the local tuberculosis sanitarium showing all types of tuberculosis, diseases to be differentiated from tuberculosis and the effects of surgical measures used in treatment.

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An effort of this character entails work. As an example—the tuberculosis subcommittee made a complete survey of the local tuberculosis situation. This alone was no small task. Weekly meetings were held for approximately three months. Each article presented was reviewed by the entire committee. A meeting was held with the local Roentgen Ray Society to discuss the economic aspect of x-ray diagnosis, resulting in their cooperation. Each subcommittee presenting its subject must necessarily devote time and effort. The heart committee has, for instance, made surveys in some of the public schools, the results of which are used as valuable material in exhibits and papers.

Thus, a program of graduate education is being attempted, partly in the interest of the membership and partly in self defense. We believe a similar program can be carried out in larger, centers and modified for use in smaller societies whose membership extends over a greater area.

\* \* \*

E. G. Whipple, M.D., Chairman, Public Health Committee of the Medical Society of the County of Monroe.

12. (a) An insurance carrier other than a self insured employer shall not participate in the treatment of injured workmen except that it may employ medical inspectors to examine compensation cases periodically while under treatment and report upon the adequacy of medical care and other matters relative to the medical conduct of the case.

(b) A self insured employer may maintain a compensation medical bureau at the place or places of employment if such bureau is required because of the nature of the industrial hazards or the frequency of injuries to

employees arising out of industry. Such bureau or bureaus shall be authorized and licensed pursuant to subdivision 5, and their use by an injured employee shall be optional in accordance with the provisions of paragraph (a) of subdivision 2.

*Committee—Eugene H. Pool, M.D., Chairman; George Bachr, M.D., Secretary.*

*Frederick W. Bancroft, M.D., David J. Kahski, M.D., Adrian V. S. Lamber, M.D., Thomas A. McGoldrick, M.D., Charles A. McKendree, M.D., Frederick M. Miller, Sr., M. D., Harry R. Trick, M.D., Frederick S. Wetherell, M.D.*

## Committee on Public Health and Medical Education

### Graduate Education

THE Committee announces a course on Dermatology in Onondaga County to start on January 11th.

Particular attention is called to a new course of lectures on Orthopedic Surgery. This course will consist of six lectures from a list of twelve practical phases. It should prove of special interest to those Counties where objections have been raised to the care of Orthopedic cases by the State Department of Health. Information can be obtained by writing to the Chairman, Dr. Thomas P. Farmer, 608 East Genesee St., Syracuse, N. Y.

### New Member of the Committee

The vacancy caused by the sad and untimely death of Dr. Nellis B. Foster has been filled by appointment of Dr. Russell L. Cecil of New York City.

### Malnutrition of Children Among Families Under Welfare Relief

The Committee views with deep concern the possibility that in the families who are on welfare relief the children may be seriously undernourished. Such a condition, pitiable in childhood, or even tragic, implies a potential handicap for the future adult. Therefore the Committee has given thorough consideration to the matter. Conferences have been held with Commissioner Parran and Dr. H. L. K. Shaw of Albany; and, finally, a recommendation was presented to the Executive Committee that the State Society sponsor surveys of actual conditions in a few special districts in order to determine to what extent such malnutrition may in fact exist.

While the work can be best joint activity of a County State Department of Health, that the Chairmen of local Committees, who may be charged with the surveys. Further will be issued.

### Public Health

This Committee is charged with a duty. Most happily realized in the f

Monroe County, which was prepared at the instance of this Committee.

It is clearly to be seen, therein, that aggressive and sustained action by an enlightened County Society, in the effort to better public health, necessarily brings in graduate medical education.

This Committee commends most highly the Monroe County work so well described by Dr. Whipple.

### An Effort in Graduate Education by the Public Health and Graduate Education Committees of the Medical Society of the County of Monroe

FOUR years ago the Public Health Committee of the Medical Society of the County of Monroe was reorganized into an active committee with a chairman and twelve members. Three were members-at-large and nine became chairmen of subcommittees.

The motive prompting the activities of this committee was the belief that organized medicine should assume leadership in local health activities and that this Society could coordinate these activities in the interest of efficiency. A full report of results will be made at a later date; but it is believed that results already obtained prove the energy well expended from the standpoint of both the Society and the public.

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E. G. Whipple, M.D. Chairman, Public Health Committee of the Medical Society of the County of Monroe

# County News

[News items of general state wide interest will be welcomed from all members who are asked to submit them through their County Society reporters.]

## Albany

**Close Accord between City Administration and County Society:** At the Annual Dinner Meeting of the Society on December 12th, 1933, Mayor John Boyd Thacher declared himself as in complete sympathy with the Albany Society in opposition to the modern socialistic tendencies now cropping out in medical circles. The Mayor was particularly emphatic in expressing his desire to bring back to the family physician such work as Vaccinations, administration of Toxoid and Toxin-Antitoxin, and the proposed city wide examination of school children for tuberculosis.

\* \* \*

## Clinton

**The "Poor Doctor"**—The Society went on record on November 21st, 1933, as opposed to contract practice in the care of public welfare charges, the so-called "Poor Doctor" System, as being against the best interests of both the Community and the Medical Profession.

**Payment of Hospitals and Physicians**—A formal resolution of protest to the Board of Supervisors of Clinton County cited failure of the Board to pay hospitals and physicians as compared to other County employees during the entire year.

\* \* \*

## Rensselaer

**Dr. Flaherty addresses County Society**—On December 12, 1933. President, Dr. F. H. Flaherty gave a resume of what the State Society represents and how it functions.

**In Favor of Nurse Anaesthetists**—The Society went on record as favoring continuance of the practice of registered nurses administering anaesthesia.

\* \* \*

## Rockland

**Annual Meeting and Banquet**—December 6th, 1933, was primarily devoted to gaiety and good fellowship with a banquet and a program of music and entertainment. This proved to be one of the most outstanding social events of the year on the Society's Calendar.

\* \* \*

## Suffolk

**An Innovation Suggested**—In his recent Presidential address, appearing in the News Letter for December, 1933, Dr. Louis F. Garben suggested that the Society advocate a change in the Medical Practice Act to make membership in a County Medical Society a "requisite for obtaining a license to practice medicine." He had gained the notion from study of the customs of Denmark where

"County Societies can determine whether a given doctor is or is not allowed to practice," and where expulsion from the Medical Society is "tantamount to revocation" of license to practice.

**Meeting of Suffolk County Public Health Nurses' Association**—On November 20th, 1933, Dr. B. P. McLean, Deputy Commissioner, addressed the meeting on "Placing Responsibility for Positive Health in Preventive Medicine." He stressed the necessity for co-operation between an enlightened Public and the Medical Profession in order to secure further progress in prevention.

\* \* \*

## Tioga

**"Pulmonary Suppurations"** was the subject of an address given by Dr. Ethan F. Butler of Elmira at the December meeting of the Society.

\* \* \*

## Westchester

**Value of Medical Charity in Hospitals of the County**—A careful survey recently concluded by the local Economics Committee has yielded definite figures for the value of free medical attendance rendered by private physicians in the wards of hospitals in the County. Thirteen out of a total of fifteen hospitals supplied accurate figures to which were added minute estimates for the remaining two.

In the year 1932 thus:—

17,117 persons received free care in Wards,

56,171 persons received free care in Dispensaries.

A rough but conservative estimate of value of a full day's medical attendance was set at \$3.00, of a major operation at \$100.00, of a minor operation at \$25.00, of an obstetrical delivery at \$50.00, of a dispensary treatment or consultation at \$2.00.

"On this basis we find that the medical staffs of Westchester County Hospitals have contributed in one year service in medical attendance to ward bed patients equivalent to \$947,325; in major operations the equivalent of \$325,600; in minor operations, \$127,050; in obstetrical deliveries \$89,250; in dispensary consultations and treatments \$368,648. Adding these figures together, we note that the attending physicians and surgeons of the fifteen general hospitals of the County have contributed to the poor in these institutions in a period of 12 months, medical and surgical attendance conservatively worth \$1,857,873."

**RADIOTHERAPY IN DISSEMINATED SPINAL ARACHNOIDITIS**By **HERMAN SELINSKY, M.D.**, and **WILLIAM HARRIS, M.D.***From the Neurological and Radiotherapy Departments of Mount Sinai Hospital, New York City*

Read at the Annual Meeting of the Medical Society of the State of New York, April 5, 1933, New York, N. Y.

VARIOUS neurological conditions which are accompanied by pain when treated by the roentgen ray, yield favorably to this form of therapy. This observation is perhaps best illustrated in local or metastatic malignant disease involving the spinal column and pelvis where pressure upon the spinal cord and its roots produces pain. The distressing symptoms associated with intramedullary disease of the spinal cord (e.g., syringomyelia) yield favorably to radiation therapy. Radiculitis secondary to spondylitis also responds well to radiotherapy in a certain number of cases. Although the application of radiotherapy in infectious processes is mainly empirical—for there is no sound evidence to prove that it possesses bactericidal powers—we do know that the productive tissue proliferation in inflammatory processes is extremely radiosensitive. With these facts in mind, radiation therapy suggested itself to us as an agent which might be beneficially utilized in the treatment of disseminated spinal arachnoiditis.

**Clinical Features.**—Spinal arachnoiditis was first described as a clinical entity by Spiller<sup>1</sup> in 1903. In this communication, attention was drawn to the history of pain in the extremities, with objective evidence of spinal-cord involvement. Pathologic findings consisting of thickened, inflamed arachnoid adhesions were noted. Later, Stookey<sup>2</sup> in a review of this clinical problem, summarized his extensive experience in the surgical treatment of this disease. In the cases reported by him emphasis was placed upon the picture of spinal-cord compression simulating tumor. While some of the cases showed an excellent response to surgical intervention, Stookey implied that in the more extensive processes, surgery was

limited in its scope as the field of exposure is of necessity restricted.

**Etiology.**—The etiology of this condition is at present obscure. While most of the cases do not show arthritis roentgenographically, the presence of osteoarthritis of the spine in some instances may lead one to believe that there may be a relationship between the two conditions. In a number of cases the history of an antecedent pneumonic or pleuritic infection has been obtained. This suggested the possible extension of the infectious process to the arachnoid and the spinal roots. Recurrent attacks of tonsillitis or the presence of dental disease may also play a rôle as a possible focus of infection, such factors having been elicited in two of our cases. The older views frequently mention syphilis as an important source of infection in spinal arachnoiditis. However, the serology in all of our cases has been negative.

**Symptomatology.**—There is a history of pain in one or more extremities or over the trunk. The pain is of peculiar type resembling that due to posterior spinal-root irritation; it may continue over a period of months before a physician is consulted and involves at various times different extremities, with remissions and exacerbations.

Objective findings are noted which point to a polyradicular involvement sometimes associated with evidence of spinal-cord impairment. These findings are sensory disturbances which are radicular in character and an alteration in the deep reflexes.

**Diagnosis.**—The diagnosis of this condition is based upon the history, pain in the extremities or trunk, the objective neurological pattern of a polyradicular disorder, and the confirmatory evidence of partial or complete block in the spinal subarachnoid space. The latter is discovered first, by the Queckenstedt test with the characteristic delay in the fall

and rise of the fluid in the manometer; second, by contrast myelography utilizing iodized oil which is a graphic means of indicating the disseminated character of the disease process (Fig. 1). The clinical features are perhaps best shown in the illustrations of case histories.

*Case Reports.*—The present series consists of 5 cases. For purposes of expediency the records of only 2 cases, typical of the clinical picture and the response to x-ray therapy, are presented:

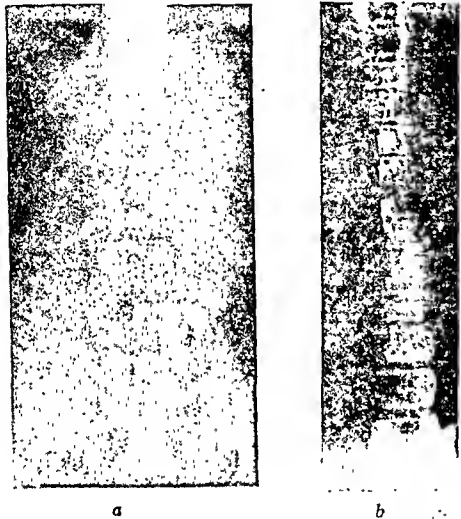


Fig. 1.—(a) Normal descent of lipiodol. (b) Scattered arrest typical of arachnoiditis.

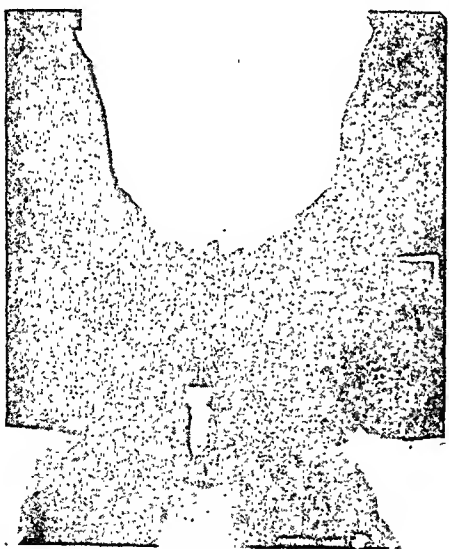


Fig. 3a

CASE 1.—M. C., nurse, 27 years of age, was first seen in September, 1928. Her complaint consisted of shooting pain progressively involving all of the extremities and the face for one and a half years. Findings on admission consisted of: zones of hyperalgesia, radicular in pattern (as charted) and difference in the deep reflexes (Fig. 2). The Queckenstedt test showed a partial block. Lipiodography performed by cisternal injection revealed an arrest of oil droplets as seen in radiographs (Fig. 3).

The treatment first given to the patient consisted of analgesics and foreign-protein therapy. Very little improvement was noted either by the patient or by the examining physician. Following deep x-ray therapy she obtained striking relief from the pain, and when, in 1931, the pain recurred, repetition of the x-ray therapy resulted in complete disappearance of the pain.

Present Status:—patient is working actively, and has no discomfort.

On examination, there are noted areas of hyperalgesia at C8-D1 on the left side, and at L5-S2 bilaterally (absence of any subjective symptoms).

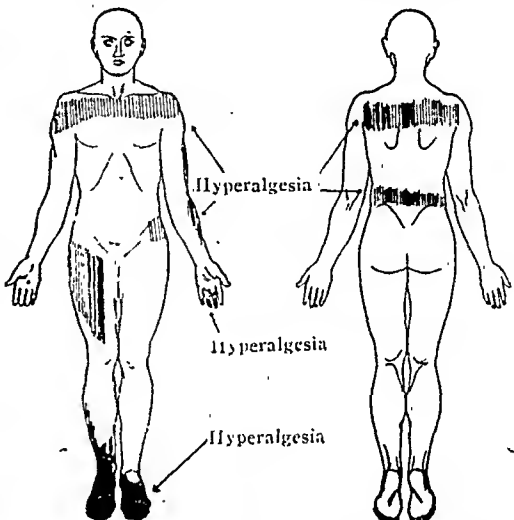


Fig. 2.—Case 1, Marian C. (1) Right KJ and AJ greater than left. (2) Weakness of left upper and lower extremities. (3) No pyramidal tract signs.—Queckenstedt: partial block.



Fig. 3b

CASE 2.—M. C., male, aged 59. This patient gave a history of gonorrheal infections on two occasions in his youth. He was first admitted to the service of Dr. I. Strauss in 1927, with a history of pain in the legs of six years' duration. This was relieved after the removal of diseased teeth. About the time of admission he suffered a return of pain in the left lower extremity. Three epidural injections were given without relief of symptoms. The signs on admission: Hypalgesia



L5 SI, diminished I AJ, bilateral Lasegue sign (Fig 4)

The first Quackenstedt test showed a rather dubious delayed rise and fall. A subsequent test failed to confirm the presence of partial block. Lipiodolography showed an arrest of the oil as seen in the radiograph (Fig 5). Immediately following this procedure the patient complained of exacerbation of pain in both lower extremities. Laminectomy was performed and a bony prominence at L2 was found which was interpreted as an osteoma; however, there was no specimen re-

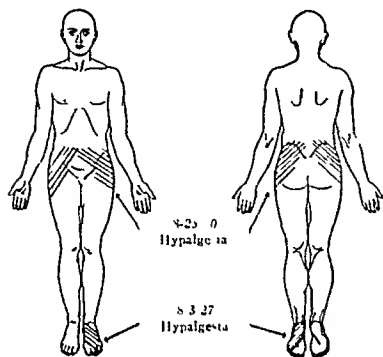


Fig 4—Case 2, Morris C. (1) Tenderness over lumbar spine (2) Diminished abdominal reflexes (3) Lasegue sign on left (4) Diminished left AJ—Quackenstedt 1927 partial block (?) 1930 negative

moved for histologic study. Following the operation, the patient felt definite symptomatic improvement. Three years later, in 1930, a return of pain in the lumbar region compelled the patient to enter the hospital again for treatment. The Quackenstedt test was negative for block; the spinal fluid was clear and contained two cells per cubic centimeter. The patient was treated with salicylates, baking, and diathermy, these measures affording him moderate relief. In 1931 he came to the out-patient department complaining of burning pain in the back and a burning sensation in both feet, cramp like in character. It was suspected that the patient might have arachnoiditis and he was referred for radiography, which demonstrated a scattering of lipiodol confirming the clinical impression of arachnoiditis. He was then sent for deep x-ray therapy and complete cessation of pain was obtained. He returned in March, 1932, because of a recurrence of the cramp like burning pain in the left foot. Following a second course of treatment the patient suffered only one attack of this pain in the subsequent six months. The objective sensory findings at the present time do not show any deviation from the normal. There is however a persistent diminished left Achilles jerk.

**Treatment.**—The results obtained with roentgenotherapy have been gratifying and showed a distinct advantage over all other forms of treatment which were previously employed. Since there is a definite tendency for these painful attacks to recur at varying intervals, the treatment may be repeated as

the occasion warrants up to the point of skin tolerance to radiation. The technique employed may be summarized as follows:

High voltage roentgen radiation was directed to the spine by cross-firing.

The point of attack was indicated by the level or levels of sensory disturbances. Depending upon the response to the therapy, one or more series were given. Series of treatments were repeated at six weeks intervals if the indications so warranted.



Figure 5

Fractional treatments were given at each sitting consisting of 100 to 250 roentgen units until a total of 900 roentgens had been administered. The factors used were 180 kilovolts, a filter of 0.5 mm copper and 1 mm aluminum, 1 m.a., 10 to 50 cm focal skin distance.

#### Summary

Disseminated spinal arachnoiditis is a condition characterized by signs and symptoms of a polyradicular disturbance, sometimes associated with mild spinal cord involvement. The etiology is as yet obscure. Evidence of block in the subarachnoid space is shown by the Quackenstedt test, and by contrast myelography showing the disseminated character of the disease process. There is a tendency for a recurrence. Roentgen therapy has proved to be a valuable therapeutic measure in this condition.

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## CRANIAL NEURITIS

By SAMUEL BROCK, M.D., and S. BERNARD WORTIS, M.D.  
New York City

Read at the Annual Meeting of the Medical Society of the State of New York, April 5, 1933, New York, N. Y.

IN the past two years the writers have observed 4 instances of cranial neuritis in the course of herpes zoster, dental and general infections. While different observers have reported somewhat similar cases, this group is an unusual one because of the clinical signs and course, the association of uveitis in 2 of the cases and the problem arising in connection with the probable virus etiology and its mode of dissemination. In his Morison lectures on peripheral neuritis, James Collier<sup>1</sup> gives an excellent analysis of the rich clinical material observed by him in his long career. He lays particular stress on the types of neuritis of probable virus origin, the ascent of the virus by way of the axones, the widespread involvement of the nervous tissues, and the "extraneuronic delivery of the virus" from the nerve terminals, *viz.*, to the salivary glands in rabies and to the dermatomic skin areas in herpes.

CASE 1.—M. R., a merchant, 39 years of age, was admitted to Beth Israel Hospital on November 30, 1931.

Ten days before admission, the patient was awakened from sleep by acute "sticking" sensations in the back of the left shoulder. Shortly afterward he complained of occasional chills and warm "flashes" and the pain returned and radiated down the left arm and forearm; it was severe enough to disturb his sleep. On the day before admission, while walking about, he felt a sudden severe pain over the upper part of the sternum associated with a feeling of fulness, substernal tightness, and a choking sensation. He experienced some difficulty in catching his breath. Because of the symptoms he was admitted to the hospital as a case of possible coronary thrombosis.

After he had been in the hospital for a few hours, a right peripheral facial paralysis appeared, to which was added a left peripheral facial paralysis about twelve hours later.

The past history was irrelevant. He has stuttered since early childhood.

On the day after admission the neurological examination disclosed the following abnormalities: bilateral facial paralysis of the peripheral type with inability to blow out the cheeks, show the teeth, wrinkle the forehead or close the eyes completely. Innervation of the vocal cords was normal. There was absence of knee and ankle jerks and mild sensory changes of radicular type, especially on the left. Weakness of the hamstring and quadriceps femoris muscles developed in the next two days. The muscles of the back and of the lower abdomen then became affected in consequence of which he was unable to sit up or expel enemata. In the upper

extremities weakness of the triceps was very marked. Later, the abdominal and cremasteric reflexes disappeared. There was diminution of all forms of sensation in the lower extremities with an indefinite level at about D-12. Pain was complained of in the lower extremities; the calves were tender to pressure. No pathological reflexes were noted. The following week, weakness appeared in the muscles of the shoulder girdle, in the extensors of the elbows and wrists, and in the muscles about the hip joint. Retention of urine occurred.

Three weeks after admission, the patient for the first time presented atrophy and furring of the right side of the tongue and upon protrusion, it deviated to the right.

The pulse rate throughout the illness varied from 80 to 96; the systolic blood pressure measured 136 to 160 mm. Hg; the diastolic 92 to 106. The temperature was normal.

There was no evidence of cardiac disease.

*Laboratory Findings.*—The red and white blood counts and blood sugar estimations were normal. Repeated urine examinations showed varying numbers of granular and hyaline casts. The blood and spinal fluid Wassermann reactions were negative; the spinal fluid was normal.

X-ray examination of the heart and lungs and electrocardiogram revealed no abnormalities.

Electrical tests of involved muscles showed absence of faradic reaction; the galvanic reaction was present with a greater cathodal than anodal response.

The patient received five intravenous injections of typhoid vaccine beginning with 5 million and going up to 100 million. The average elevation of temperature was between  $\frac{1}{2}$  and 1 degree. These injections were followed by eight radiotherapy treatments with an average rise of temperature to 102.2° F. Massage and galvanic stimulation of the muscles were also given.

After one month gradual improvement occurred. The facial paralysis completely disappeared. The unilateral hypoglossal weakness improved markedly. Power in the musculature of the extremities returned. The atonic abdominal muscles became stronger. Normal bladder function returned. The sensory changes and the spontaneous pains in the extremities receded. He was discharged on February 11, 1932. At that time he was able to walk about fairly well and his general condition was good.

He was examined again on January 25, 1933. Motor, sensory, and reflex functions were quite normal. However, he complained of occasional numbness in the fingers of both hands, more so on the left, and in all the toes. Occasionally, a choking substernal sensation bothered him. A slight pain in the occipital region and left temple appeared at times.

*Comment.*—There are a number of noteworthy features in this case. The onset with symptoms so suggestive of coronary vessel dis-

case is unusual. Indeed, one is led to suspect that the affection involved the cardiac vegetative fibers early in its course, implicating the very nerve elements (pre- or postganglionic) that transmit the anginal type of pain, often related to coronary disease. To pursue this speculation further would lead us too far afield.

The quick spread and severity of the polyneurotic signs, the marked involvement of the proximal muscles, and the comparatively rapid improvement are also of interest. This speedy recovery is in accord with the assumed peripheral localization of the pathology. One would suspect that the connective rather than the parenchymal tissues of the nerves are mainly affected, producing the type of "interstitial neuritis" described by Collier. Nothing is known concerning the etiological agent.

Similar cases have been reported by Osler<sup>1</sup> under the title "acute febrile polyneuritis." Later, Holmes<sup>2</sup>, Brudford, Bashford and Wilson<sup>3</sup>, Viets<sup>4</sup>, and Taylor<sup>5</sup> added other instances. Bradford notes that the "remarkably constant bilateral affection of the face is a very striking feature of the disease, as is also the involvement of the muscles of the trunk. Further, the presence of generalized weakness rather than of actual paralysis of individual muscles or groups of muscles is very characteristic. Again, the progressive nature of the palsy and its occasional ascending character together with the curious manner in which the proximal segments of the limbs with their large muscles are mainly involved, are all striking features in this disease and are not, at any rate, familiar observations in other affections of the nervous system."

CASE 2.—J. F., chauffeur, aged 25, was admitted to Bellevue Hospital, September 24, 1930. He complained of severe pain and a vesicular eruption along the third, fourth, and fifth left intercostal spaces. Three weeks before admission (seventeen days after onset) he noticed difficulty in smiling and talking.

The previous history was irrelevant.

Neurological examination revealed the following positive findings: bilateral facial paralysis with involvement of taste. There was no motor weakness of the extremities but the left knee jerk and both ankle jerks were absent. Sensation was normal.

**Laboratory Findings.**—The blood chemistry was normal. The blood count showed 11,000 white blood cells, 64 per cent polymorphs, 28 per cent lymphocytes, 4 per cent transitional cells, and 4 per cent basophiles; the red blood cells numbered 4,592,000 with 80 per cent hemoglobin. The blood Wassermann reaction was negative. The urine was normal. The spinal fluid Wassermann reaction was negative; the colloidal gold—001 2232 100. The record of the cell count and globulin estimation was lost.

X-rays of the skull and sinuses were normal.

Seventeen days after onset of the facial paralysis, the electrical reactions in the left facial muscles disclosed no response to faradism; galvanism gave a slow reaction (*i.e.*, R.D.). On the right, there was slight response to faradism and a rapid reaction to galvanism.

The patient improved while in the hospital and was discharged on October 14, 1930, six weeks after the onset. Unfortunately, the patient did not return for reexamination.

**Comment.**—Facial paralysis, whether uni- or bilateral, is a rare complication of herpes zoster the virus nature of which is fairly well established. Moreover, it seems evident that the herpes virus affects the facial nerve by way of the blood stream. It is worth pointing out that mild peripheral nerve involvement also occurred in this patient as shown by the loss of the deep reflexes in the lower extremities. Booth<sup>6</sup> has described herpes zoster associated with facial paralysis. A particularly apt quotation from Collier's Morison lectures may be made at this point: "Bell's palsy, regarded as a local fibrositis with compression of the facial nerve in its canal by swelling of its sheath, and with external signs of pain and swelling in the region of the styloid process, was proved years ago by Ramsay Hunt in some of the cases to be a herpes zoster proper, by his demonstration of the herpetic vesicle in the external auditory meatus and his demonstration of the lesion in one case in the geniculate ganglion. Further, there were other cases in which there was no meatal vesicle, but zoster was coincident in some other region of the body, proving that facial paralysis without local herpetic signs could result from zoster infection. *A priori*, a great many of the cases of Bell's paralysis from exposure to cold might well be of herpetic origin."

CASE 3.—G. L., court interpreter, aged 50, entered The Neurological Institute of New York, September 30, 1931, complaining of redness of the right eye beginning four weeks before admission. One week later he noticed redness of the left eye; the following day photophobia was so troublesome that he was obliged to wear dark glasses. Fourteen days after the onset he experienced severe pain in the thoracolumbar region. Seven days later, right facial paralysis appeared followed by left facial involvement; as a result, he could not whistle or smile, and closing the eyes became difficult. He then saw double and was annoyed by tinnitus in the left ear. There was no vertigo. There was no fever at any time during his illness.

The past history was irrelevant.

Neurological examination revealed the following: bilateral peripheral facial paralysis and a diplopia on divergence which soon disappeared. There was no evidence of any other peripheral nerve involvement.

The ophthalmologist reported marked bilateral ciliary injection with inflammation of the entire uveal tract (bilateral uveitis).

**Laboratory Findings.**—The blood examination revealed: white blood cells, 8,000, 70 per cent polynuclears, 27 per cent lymphocytes, 3 per cent eosinophiles. The hemoglobin was 87 per cent. The red-blood cells numbered 4,880,000; the color index was 0.9. The blood chemistry and Wassermann were normal. The urine was normal. Manometric estimation of the spinal fluid showed normal pressure and no block. The fluid was clear, contained 81 cells (94 per cent lymphocytes, 3 per cent polynuclears, 3 per cent large mononuclears); the globulin was 2 plus, the protein increased (92 mg.); the Wassermann reaction was negative, and the colloidal gold 111 1221 000 (October 2, 1931). Again on October 12, 1931, the spinal fluid showed 73 cells, an increase of protein (72 mg.), negative Wassermann reaction and increased globulin.

X-rays of the skull were normal; there was slight calcification in the region of the choroid plexus. Chest roentgenograms showed evidence of old bronchitis and an old healed right pleuritic lesion.

Because of the coincidence of uveitis and the facial paralysis, antiluetic treatment (mercury inunction and potassium iodide) was instituted for a period of about two weeks and was discontinued when sero-logical studies were found negative.

The patient began to improve and was discharged on October 21, 1931. His subsequent improvement was rapid and complete.

**Comment.**—The association of bilateral iridocyclitis with cycloplegia, bilateral parotitis, bilateral facial paralysis and mild generalized polyneuritis, with or without an erythematous rash, was described by Feiling and Viner<sup>3</sup> in 1922. We believe that our case is similar, although there was no evidence of parotitis or limb polyneuritis. It would seem that we are dealing with a blood-borne virus infection first evidenced by conjunctival and uveal inflammation. Involvement of the parotid glands and perhaps other peripheral nerves bespeaks widespread diffusion.

CASE 4.—E. P., a sea captain, 34 years of age, was first seen in November 1932 at the U. S. Marine Hospital, New York, N. Y.

About September 10, 1932, an "infected tooth" in the right upper jaw began to hurt him. The pain spread to the right side of the face, which became swollen. After four weeks two teeth in the right upper jaw were extracted. Though the face remained swollen, the pain was relieved. However, in about a week the pain in the right face returned and the adjacent forehead and scalp on that side became sensitive. In addition, the right eye was "sore and reddened."

The past history was irrelevant.

The neurological examination, two months after onset (November 11, 1932), revealed the following positive findings: a definite right ptosis with a questionable proptosis of that eye. The right pupil was smaller than the left; both pupils were irregular. There was a questionable weakness of the left external rectus muscle. The disks were normal. The corneal reflexes were equally active. No sensory, vasomotor, or secretory abnormalities could be demonstrated on the skin of the face.

Three months after onset, December 19, 1932, Dr. C. R. Franklin made the following ophthalmological note: The right eye shows moderate ptosis and moderate injection of bulbar and tarsal conjunctiva; the iris is slightly atrophic. The pupil reacts consensually and directly and is slightly irregular. The lens is clear. The vitreous shows some very fine floating vitreous opacities (uveitis). There is a definite haziness of the nasal margin of the right nerve head. There is a paresis of the left external rectus as shown by gross observation and diplopia test, together with a definite anisocoria (the right pupil being constantly smaller than the left pupil).

Four days later both optic disks appeared normal and were clearly outlined. The smaller right pupil, the right ptosis and the slight left external rectus weakness persisted. His right facial pain was diminished. One week later, he went back to work.

**Laboratory Findings.**—The blood Wassermann reaction was negative. The urine was normal. The spinal fluid examination (December 22, 1932) disclosed 2 cells; normal globulin; colloidal gold curve—112 1000 000; and a negative Wassermann reaction.

X-ray examination of the skull showed no evidence of fracture or increased intracranial pressure.

He received considerable dental treatment from November 11th to December 29th, 1932, diathermia was given daily to the region of the right gasserian ganglion.

**Comment.**—The history and findings suggest a toxic or infectious condition arising at the site of the dental infection and ascending most likely by way of the axones of maxillary trigeminal fibers rather than by the perineural lymphatics. Indeed, the very existence of the latter is strongly doubted by some investigators. The trigeminal branches or ganglion and the paratrigeminal sympathetic fibers were partially involved in the neighborhood of the right cavernous sinus; to the former implication may be ascribed the pain in the face and forehead, to the latter the ptosis and miotic pupil (Horner syndrome). The slight right proptosis, the involvement of right optic nerve and the right eye (uveitis) add further weight to this conception of the spread and final localization of the noxious agent.

Such cases are seldom recorded and their incidence is difficult to estimate. In 1924, Raeder<sup>4</sup> reported 5 cases of paratrigeminal paralysis of the oculopupillary sympathetic. In 2 cases head trauma (fractures of middle fossa) was responsible; in a third case an endothelioma was the cause, and in the remaining 2, the etiology was undetermined. Raeder placed the pathology in the region of the gasserian ganglion and adjacent cavernous sinus. A toxic or infectious etiology was not responsible in any of his cases. Bing<sup>10</sup> illustrated the case of a woman with left trigeminal herpes zoster associated with left-sided miosis, enophthalmos and ptosis (Horner syn-

drome). Probably dentists see such syndromes oftener than physicians. In any event, this clinical picture must be a rare one, despite the frequency of dental and periodontal infection.

### CONCLUSION

The authors describe 4 cases in male adults. In the first, bilateral facial and a unilateral hypoglossal neuritis occurred as part of a general polyneuropathy which began with "referred cardiac pain." In the second, a bilateral facial neuritis followed thoracic herpes zoster. In the third, bilateral facial neuritis, unilateral tinnitus aurium, and transient diplopia on divergence followed a bilateral uveitis. In the fourth, a paratrigeminal sympathetic paralysis (Horner syndrome), trigeminal pain, and a homolateral uveitis resulted from an ascending infection which began in an alveolar (maxillary) abscess. In none of these cases was there any evidence of heavy-metal intoxication.

In considering these cases and the related literature, a number of interesting facts deserve emphasis. We seem to be dealing with virus infections which are lymph- or blood-borne. Until viruses can be identified with precision it would seem advisable to regard these cases from their clinical viewpoint. In the future, etiological criteria will more effectively define the individual case.

It is curious that the facial nerve is so vulnerable to infection or intoxication. The well-known incidence of Bell's palsy need only be mentioned in this connection. In contradistinc-

tion, the seventh nerve is most resistant to local intracranial pressure, accounting for the mildness of facial involvement in large acoustic neuromata.

The occurrence of uveitis in 2 of the 4 cases is not surprising when one considers the susceptibility of this tract to infections of a general as well as of a local character.

At present, no treatment seems specifically effective. The rapid onset and recovery of these neuritides in the nonfatal cases is in harmony with similar features exhibited by most of the other known virus diseases.

We are indebted to Dr. E. D. Friedman (Case 1), to Dr. Foster Kennedy (Cases 2 and 3) and to Dr. Paul Stewart (Case 4) for permission to use this material from their respective services.

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1192 PARK AVE.

### SOCIETY FOR THE PREVENTION OF ASPHYXIAL DEATH

The second Annual Conference will be held on February 19th and 20th at the Hotel Biltmore, New York City. Eminent speakers will discuss the problem of death from asphyxiation during the two days from three angles: research, instruction and practice. A dinner in honor of the pioneer in prevention of asphyxial death, the late Dr. Joseph O'Dwyer, will follow on the evening of February 20th. Reservations for the dinner may be made in advance through the office of the Society for the Prevention of Asphyxial Death at 2 East 103rd Street, New York.

The Southeastern Surgical Congress will hold its fifth annual assembly in Nashville, Tennessee, March 5, 6, and 7. Secretary: Dr. B. T. Beasley, 1019 Doctors Building, Atlanta, Ga.

Address to County Societies on Venereal Diseases.—Dr. James N. Vander Veer, Liaison Officer between the State Society and the Division of Social Hygiene of the State Department of Health, announces that Dr. Pfensser of that Department and Dr. Vander Veer are address any of the subjects of "syphilis and management," provided notice in advance to the Moving picture which are new and of value.

The American Public Health Association announces that its Sixty-third Annual Meeting will be held in Pasadena, California, September 3 to 6, 1934. The Western Branch of the Association will hold its Fifth Annual Meeting at the same time.

Dr. J. D. Dunshee, Health Officer of Pasadena, has been appointed Chairman of the Local Committee on Arrangements to be assisted by Dr. John L. Pomeroy, President, and Dr. W. P. Shepard, Secretary of the Western Branch.

## ANXIETY AS A MEDICAL PROBLEM

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Read at the annual meeting of the Medical Society of the State of New York at New York City, April 4, 1933.

In these days of depression when all humanity is burdened with anxiety, it becomes more important than ever to consider the problem of anxiety. Economic difficulties are added to the struggle in the daily routine, and it is to be expected that individuals of weaker psychological make-up react in an exaggerated manner. To the intrapsychic conflicts which may create anxiety, the external economic factors come as additional disturbances. Persons apparently well adjusted, formerly coping with their habitual difficulties, now become unable to make an adjustment.

The manifold aspects of the psychological and social implications of anxiety, are so prominent and so central, that we cannot ignore them when dealing with the sick. It no longer suffices to recognize their presence; we must deal with these anxiety manifestations as part and parcel of the whole illness.

Medical education has hitherto not displayed much interest in the psychological factors of the patient's illness. It did not help matters any, that the physician had more and more opportunity to see among his patients many suffering from mental anguish. In general, the medical treatment was adequate, but sometimes the physician could not explain the absence of the expected improvement. The reason was simple. Because of the lack of interest in the psychological implications which paralleled the physiological difficulties, the physician did not comprehend the patient's difficulties which did not take an organic course. They therefore did not give full attention to those complaints, and fell into the habit of regarding them as unimportant. Feeling their inadequacy to penetrate and to follow the illness along nonbiological lines, they were compelled to give up the further study of the case. Yet, access to the mental aspects of illness, present themselves obviously in the symptom. One has merely to start his investigation with a view of including the total personality.

We may generalize here and say that the outstanding difficulty of every neurotic is the inability to adjust properly to society. This difficulty varies in degree with the severity of the neurosis itself. In anxiety neurosis or

in morbid phobias, the maladjustment to society is not always apparent; nevertheless we are able to obtain the information from the patient that part of all his actions are permeated with anxiety. It takes a large portion of intellectual effort and energy to fight off the anxieties which accompany his actions. In probias, this use of energy is more apparent than in the diffuse anxiety states. To understand the origin of the specific anxiety we have to examine the conflicts which have produced it. These conflicts may yield an understanding of the way the person habitually handled his conflicts which, in turn, may illuminate his personality make-up. The psychic forces which work side by side in synthetic function and those which at other times operate in antagonistic ways, will also reveal themselves at close examination.

By close examination of the psychic forces, which make the person act and react, and which, in turn, determine his behavior and make him a member of society, we finally discover those instincts and impulses which start in early childhood. For a time fully gratified these instincts eventually begin to meet with frustration. Reality, represented by the parents at first, will be a barrier to the full expression of these impulses. Repressive forces come into action. As a result of this, a compromise formation must be attained by the child. He must compromise; he must accept the external demands of reality and give up some of his desires. This compromise formation becomes the prototype for life. The inability to accomplish this invariably leads to conflicts. On the strength of the instinctive desire and on the strength of the power for repression, will depend the degree to which the conflicts incapacitate the individual in his actions. Conflicts may therefore be considered as the result of a struggle between two antagonistic strivings; the instinctive desire which aims at gratification at any cost, and the demands of reality which inhibit the straightforward tendencies for gratification. Of these two forces which exert their dynamic action in all of us, the instinctive desire is usually disguised (it is unconscious) because self-criticism does not let us recognize it in ourselves. If the drive is very powerful, and if there is danger of its breaking through to action, anxiety develops, serving as control.

The question arises: How can we balance these opposing forces? In other words, how can we, on the one hand, modify the instinctive desires from their primitive form, and on the other hand, how can we make reality demands more tolerant?

In order to enable you to follow the theoretical discussion of the problem of conflicts between instinctive drives and reality demands, and in order to make the approach to the origin, the content and the treatment of all anxiety states, more comprehensible, I present the following clinical case.

The patient is a man, 35 years old, of good social standing and with business ability. He had been married for thirteen years, and has two children.

The peculiar complaints and fears with which he came for treatment sounded childish and much like a fairy tale. He himself considered them so, but he could not prevent their appearance or escape their torture. Out standing among these fears was an animal phobia. He feared the possibility of people, and of himself, turning into animals.

He also was afraid that he might go blind. He feared that people would disintegrate. He had to repeat his name often so as to remember who he was. Besides, he was afraid that he would not be able to recognize people.

In tracing back his life history and his developmental stages, strong aggressive tendencies became evident. He felt at times great irritation with his family despite the tenderness and devotion he lavishly showed them. He would not hurt their feelings, but underneath this superstructure of tenderness, he was constantly annoyed.

His ambivalent feelings manifested themselves also in his sexual life. He suffered from ejaculatory procreos, which, in addition to his anxieties, was another reason to seek aid.

The patient's sickness dated from the year following his marriage. It started with the fear that his heart would stop beating (several members of the family having died of heart disease). Frequent medical care consisting of reassurance only, gradually caused this fear to disappear temporarily, but the anxieties started anew a few years later.

As we retrace his development from early childhood, we see him as the only child, sometimes alone with his mother for days at a time, listening to fairy tales. The occasional quarrelsome and aggressive behavior of the father also played an important role in the patient's anxiety. After a long-lasting analysis, all the symptoms showed themselves to be revived and reactivated episodes of his forgotten childhood.

It is a well-known fact, as was the case with this patient, that at the bottom of the childhood fears is the desire for attention, a desire to be taken care of, not to be left alone, etc. Our patient also developed his anxiety symptoms for the purpose of protection.

All during the years of his marriage the patient secretly contemplated extra-marital sexual experience, not having had any before marriage. His fantasies when walking in the street, or when in company, carried him always into imaginary situations involving other women. Those fantasies ran parallel to fantasies about some day divorcing his wife, and again being independent. With the birth of his first child, the initial symptoms and fear of blindness developed. He became more concerned with himself than with external matters. And from then on, with the persistent craving for extra marital gratification there always appeared some kind of fear concerning his health. His anxieties served to divert his sexual interests, thus avoiding the probable dangers which might otherwise have arisen from their gratification. These imaginary dangers were also bound up with his childhood fears of his father, whose criticism he had always dreaded. He had remained infantile in many of his reactions. His early childhood experiences, the over protective attitude of his parents and pampering by his mother, influenced him in later life by constantly making him expect compensation for all his accomplishments.

In maturity, we consider the fear of being left alone a neurotic one, because the adult is expected to tolerate frustration. Neurotic people cannot rid themselves of early childhood attachment, they do not develop enough resistance and defense against the vicissitudes of life. They cannot and do not achieve the complete management of instinctive drives which is important in adult adjustment.

Instinctive drives are mobile in all of us. The ego registers every attempt of the socially inhibited instinctive drive to break through; it declares the drive dangerous, and projects it outward, attaches to an external situation or object, thus creating and maintaining a state of anxiety.

One point must be emphasized. Namely, that whereas, normally, we differentiate between real anxiety and neurotic anxiety, for the neurotic, his anxiety or phobia constitutes a real danger. To be sure, the danger is not an outer, imminent one, as in the case of real anxiety, from which we try to escape, but it is an inner danger, a fear of the strong urges of an instinctive desire.

The importance of the quantitative elements

in creating anxiety, should also be emphasized. Qualitatively, all of us normally have anxieties in a minimized degree. The difference between neurotics and healthy people is determined by the quantity of the emotions which have to be dealt with and the measure of the anxiety which is produced.

It is clear from the above consideration, that in all methods of therapy, we must keep in mind that neurotic tension and anxiety is caused by strong instinctive drives and desires. To provide relief for these desires and to make gratification possible, at least in some measure, is the task of therapy. Instinctive desires may be transformed into acceptable reality expression, if properly recognized and if the person learns not to fear them.

The classical method of accomplishing this is psychoanalysis, which, in its methodological approach, intends to reorganize the forces in action and endeavors to transform the neurotic personality into a stable, self-reliant being.

I shall not discuss the details of the psychoanalytic method of treatment. I shall merely mention that a great amount of energy formerly wasted by the patient in his battle with himself to keep his urges in repression and to make himself fit to social demands will be utilized after analysis in a more healthy way. New objects of interest will be created and the outside world will be invested with love and interest which formerly was centered on the patient himself.

But even in a daily routine medical practice, the physician can help a great deal. If, for reasons, analysis is impossible, a partial solution of the patient's problem may be brought about and he may be adjusted to a healthier mode of living.

In order to accomplish the task of helping the patient in his distress, the first thing is to utilize and to take advantage of the trust and reliance with which every patient approaches his physician. We can even put it more decisively and say that every patient, and especially the one suffering from morbid anxieties, behaves like a child and looks upon the physician as a parent from whom he expects help and guidance. I think that in no situation including patient and physician, does the child-parent relationship show itself more clearly than in anxiety neuroses. In this child-parent relationship lies the hint of where the physician will have to look for the root of all anxieties.

To understand the patient's distress, it becomes necessary to know the patient's whole life, his family and social relationship, and more

than that, to examine, after getting his confidence, his most hidden thoughts and wishes, mostly those which he considers antisocial. Following that line, the sexual implications will be found of primary importance in the creation and maintenance of the anxiety state. The patient, having gained knowledge of and insight into his conflict, the next task will be to induce a milder attitude toward himself and his hitherto repressed desires. He will have to learn to accept them as his own.

I make it a practice to use the above methods of approach in the Mental Hygiene Clinic where the use of classical analytic therapy is not possible. At the Clinic, we see patients who suffer from different anxiety states over a protracted period of time. We discuss the patients' problems, and reassure them with suggestions. More than that, I, at times, even apply hypnotic suggestion, knowing that the effect of hypnosis is only temporary, but if a temporary improvement is induced, there is already a good working basis for the future. We bear in mind that hypnotic suggestion really takes full advantage of the patient's unconscious dependence on a parental substitute, but since the aim of treatment is to relieve the patient of distress, this method serves the purpose. Other methods can be utilized, provided one knows what he is doing.

A certain degree of anxiety must be present normally, to achieve adjustment to the demands of reality. We must also be able to renounce without great pain and suffering, those of our desires, which, if gratified, would be the source of discomfort in our social life. Normalcy requires a certain amount of elasticity. If the individual is too weak to combat his too strong instinctive tendencies, he either oversteps the normal boundaries of society, or becomes neurotic. He will exaggerate the anxieties, will become panicky, and he will consume all his energies in combating fears instead of using them for social purposes.

In concluding my rather sketchy theoretical considerations and case history, let me remind you that the present mode of approach to the understanding of the symptomatology of all neuroses began with Freud's attempt to influence hysterical symptoms which were bound up with anxiety states. This undertaking prepared the way to the deeper investigations into the causation of the neurosis, which led to a new concept of the whole human personality. Anxiety hysterics are understood more easily than any other neurosis, because of the obvious presence of anxiety in all of us. They are also more amenable to therapy if properly understood and approached as a real problem and not as an imaginary one.

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## COLLOIDAL CHEMISTRY AND PSYCHIATRY

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It is of interest that biochemistry is endeavoring to explain physiological activity of the living organism by the study of cellular function. There is by no means agreement in observation or interpretation of the results of the various studies.

In the last few years there have appeared new biochemical hypotheses concerning colloidal states related to cell function. Many of these are still debatable and controversial.

Briefly, the various theories advanced concern themselves with the wide variety of cellular functions. The question of cell permeability is discussed, some criticizing the conception of a semipermeable membrane, others asserting its presence but considering the process of diffusion within the cell to be dependent on the activity of the cellular colloids.

Again there is controversy as to the mechanics of water intake and excretion within the living cell. Some views hold that osmotic forces are responsible. Others consider that the influence of the hydrogen ion concentration, size and shape of the colloid particle, and variation in the electrical charge are the reasons for the increase or decrease of water within the cell.

Other studies are those relating to hydrogen ion concentration, oxidation-reduction capacity, and to the concept that the cell protoplasm consists of matter predominantly protein in a physical state described as colloidal dispersion.

Literature has been accumulating, endeavoring to explain disease symptoms by theories of altered colloidal states. Some of them have even been stated as being the whole cause of the disease. It would have been much wiser if they had been kept within proper bounds and used as suggestive explanations and not as conclusions that colloidal activity might be the basis of altered function.

Ultramicroscopic studies of excised brain tissue seemed to show variation in the response of the observed tissue to changes under the influence of different chemicals. With potassium, iodide, chloride, acetate, or sulfate, swelling occurred, descending in degree from the first to the last. Less swelling

was obtained when the various chlorides of potassium, sodium, calcium, or magnesium were used. The cell structure showed loss of normal swelling with aluminum chloride. The offered explanation of this was that the colloid particles varied their capacity to take up and give off water as the absorbed electrolytes varied. Using hypertonic and hypotonic solutions, cell swelling and shrinking was also reported. Demonstration of this in excised tissue may be so but it does not indicate that such necessarily occurs in the living functioning organism.

Another theory concerning proteins of the blood plasma and their relationship to disease is: that these blood proteins are in a state of defined normal dispersion; that this normal state is altered by invading microorganisms or chemical toxins, so that water is either lost by the protein particle, or the normal electrical charge is altered. Either of these alterations, it is considered, will then result either in aggregation or dispersion of the protein colloids.

This theory has been used as an explanation of convulsive phenomena. The contention is that in rapid hydration the protein particles are precipitated in the pericapillary spaces of the brain and in slow chronic hydration they collect in the capillaries, thus causing increased cell irritability and so convulsions.

More conservative and particularly concerning convulsive states in uremia and epilepsy are those of Foster<sup>1</sup> and McQuarrie<sup>2</sup>. Foster in discussing metabolic states and uremia comments on the relationship of excess chlorides and water retention. He suggests that the hydrogen ion concentration has a function in determining whether the excess chloride will be in the plasma or in the cell. If it is in the cell, then cell swelling with changed function appears. He goes on to consider that cell-oxygen deprivation produces cellular acidosis and as a result cell edema occurs, and that this is a colloid change. Such cell acidosis would be enhanced when the phosphorus balance and ammonia formation were lowered. He finally suggested that convulsive uremia might be combined with a specific toxic base with a nitrogen retention and that the toxic base might be in the nature of a reversed chemi-

cal reaction of a substance that normally was excreted.

McQuarrie<sup>7</sup> showed in epileptic children that sudden increased water intake without diuresis resulted in convulsive seizures but negative water balance produced cessation. Sodium excretion predominated during this seizure preperiod and potassium during the convulsive period. The increased potassium output appeared from 12 to 36 hours prior to the convulsions.

He also showed an increased excretion of sodium and chloride during diuresis. This he considered indicated a removal of extracellular fluid. During his exhibition of pitressin he obtained an increased potassium excretion, and in the postpitressin period the excreted minerals were potassium and chloride instead of sodium and chloride. He interpreted this as a "leakage" of the potassium from within the cell and diffusing into the extracellular fluid.

He suggested from these observations that water retention with low mineral content acted so that excess water would tend to enter the cell and for the intracellular contents to diffuse out. He considers, as a tentative explanation, that in epileptics there is a low limit of protection against this water variation and that the influence on the cell may be due to inherent abnormalities of the cell membrane or the cell colloids. He also suggested that increased cell irritability might be due to this disturbed equilibrium between the various electrolytes and the hydrated cell colloids.

These studies seem to suggest a possible theoretical consideration that in convulsive phenomena there may be a disturbance at the physicochemical level which consists of a periodic variation in the normal ionic milieu, increased water retention in the cell, deficient excretion of metabolic products, and alteration in normal dispersion. The observations do not indicate or conclude that such disturbances are the principal or basic causes of convulsions.

Recently the theories of Bancroft and his associates have received wide notice.

Bancroft<sup>1</sup> advanced a theory of anesthesia and narcosis based on the assumption that the brain tissue cells exist in a state of colloidal dispersion.

He reported a series of observations of experiments using egg white albumin sol as a substrate. This was subjected to the action of a variety of anesthetics and narcotic drugs. The resulting behavior he described as coagulation, which in the presence of other drugs was altered to a condition he described

as peptization. Then, in experiments with animals, he considered that he could demonstrate a reduction of the anesthetic action by these peptizing agents. His conclusions were that reversible coagulation produced or accompanied anesthesia, also that decreased colloidal stability produced increased cell irritability up to the point of coagulation after which depressed cell function occurred. He explained the irritability present at one stage in recovery from anesthetics as due to reversibility of the agglomerated colloids to a state of normal dispersion.

Handovsky<sup>2</sup> offers a different explanation as to the influence on cell activity by narcotic drugs. His hypothesis is also based on the dispersed state of the cell colloids, but he concludes that narcotization produces decreased dispersion and depression of activity, whereas increased cellular activity occurs with an increase in colloidal dispersion.

Quastel<sup>3</sup> offers an entirely different theory as to the action of narcotic drugs. He has shown that they inhibit the carbohydrate metabolism of the cell. They do this by preventing the oxidation of lactic and pyruvic acid. These narcotics do not prevent the cell taking up oxygen nor the brain catalysts activating such oxygen. This disturbed metabolism, he considers, depresses cell function. Based on this, he has administered glucose and insulin during prolonged exhibition of narcotics, so preventing ketonuria and other toxic symptoms. He states that the results were favorable but he has not yet published these.

Bancroft<sup>1</sup> has further postulated that there could be two forms of "insanity"—one agglomerated, associated with overactivity, the other overdispersed or peptized, associated with decreased activity. He has quoted, in support of his contentions, examples of mental reactions in cases receiving drugs, which he defines either as coagulating or dispersing. He then concluded that these examples were "definite proof of the view that there is a normal state of dispersion of the nerve colloids and that any alteration from this state will bring about abnormal mental reactions."

In another conclusion he suggested that "disorders of overdispersion may be benefited by coagulating agents and disorders of decreased dispersion would be improved by peptizing agents."

From another series of experiments, both *in vitro* and with animals, he concluded that sodium amytal was a good example of his defined agglomerating drug and sodium thiocyanate an equally useful peptizing agent.

Observations were made on the exhibition of these two drugs in cases of manic-depressive and dementia praecox psychoses. These observations seemed to show that in these psychoses there appeared to be an opposite response to these two drugs. The responses were described as either improvement in behavior or the opposite.

Further, using Bancroft's theories and definitions, a conclusion was drawn that the manic depressive cases were correlated with agglomeration of the cell colloids, and the dementia praecox with overdispersion. The altered behavior was present only during the exhibition of the drugs and did not constitute a clinical improvement either in behavior or mental content.

This report is open to severe criticism as to the lack of proper controls and insufficient length of time in observation. Moreover, allowance was not made as to the possibility of individual idiosyncrasy to the drugs, so that the positive or negative behavior reported as evidence of the drug reactions might have been different if a wider range of dosage had been used.

Harris and Katz\* in their study did not obtain any such opposing results, but did find some serious toxic disturbances consequent to the use of sodium thiocyanate.

Further studies were made with these two drugs, both orally and intravenously. With sodium amytal orally, it was found in some cases of dementia praecox catatonia and manic-depressive stupors that individual variable amounts would allow a brief period of contact with the patient, so that information as to the mental content could be obtained. Such states were only temporary during administration of the sodium amytal and cannot be considered in any way a clinical improvement. When increased doses were given, sedation was invariably obtained irrespective of the diagnosis or of the type of behavior.

Moreover, sodium amytal has been used to produce prolonged narcosis in states of excitement occurring in either manic-depressive or dementia praecox cases. With the manic-depressives, much improvement was obtained, whereas with the dementia praecox group, the excitement was allayed, but the trend and behavior in response to it was not altered. This is contrary to Bancroft's theory, as he contended that the manic-depressive group was of the agglomerated type and it was found that his defined agglomerating drugs produced eventual improvement, whereas with his described peptized group, no results were obtained with his so called agglomerating drugs.

In a more recent observation, 11 cases of dementia praecox—9 hebephrenic and 2 paranoid—were studied under sodium thiocyanate. They all showed chronically excited states. Under sodium bromide, 9 showed control of excitement and improved response to nursing care, but very little reaction when under sodium barbital. Four cases were helped by sodium bromide but were more responsive to sodium barbital. One was slightly improved by sodium bromide and showed no response to sodium barbital.

These 11 cases would fall in Bancroft's classification of the overdispersed type. But it was found that a peptizing agent produced benefit, whereas an agglomerating agent, which according to his theory was indicated, did not do so.

Bancroft states that sodium bromide and sodium thiocyanate have similar peptizing action and that sodium thiocyanate is the better of the two. Because of the improvement to sodium bromide, the 14 cases were given sodium thiocyanate. One dementia praecox hebephrenic was apparently improved in behavior and has continued improved, even with the cessation of the drug. Her trend, however, has not shown any alteration. The remaining 13 were very much excited, 7 cases showing signs of mild intoxication. Following withdrawal of the sodium thiocyanate, they continued excited and did not show improvement until sodium bromide therapy was resumed.

From these subsequent observations the conclusions of the first report as to correlation with theoretical colloidal states are in error.

These later studies, moreover, have not shown any general therapeutic value for sodium thiocyanate in the treatment of the psychoses.

From the clinical studies there is no evidence to show that such colloidal states as Bancroft describes are present in the psychoses. No work has been done to show that sodium amytal and sodium thiocyanate act specifically and selectively on the sensory cells of the central nervous system, nor is there evidence that the action of these drugs in the body is essentially colloidal as Bancroft considers.

Because a drug defined as agglomerating produces improvement in a psychotic state, it cannot be concluded that such psychotic state was due to an overdispersion of the brain colloids. Similarly no conclusion can be reached that agglomeration is the colloidal state present if a so called peptizing drug produces benefit.

Clinical experience has now shown that in response to these so-called agglomerating and peptizing drugs there is no relation between the reaction and diagnostic classification.

In conclusion it may be said that biochemistry is attempting to explain cellular physiology and nerve-cell function in terms of colloidal behavior. Explanations have also been offered for pathological disturbances. The theories are of interest and it is hoped will be of assistance in the solution of some of our problems. However, in their present hypothetical and inconclusive state they cannot be accepted as the adequately correct explanation of psychotic symptoms and syndromes.

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MARCY STATE HOSPITAL.

## THIS AND THAT

Immediate and united effort to curb the rapidly rising death toll from degenerative diseases of the heart, arteries, and kidneys was urged by Dr. William Muhlberg, medical director of the Union Central Life Insurance Company of Cincinnati, at the recent convention of life insurance presidents. He said that for the first ten months of 1933, as compared with the like period of 1932, deaths from these causes showed an increase of 10.6 per 100,000 population.

A native East Indian medical journal reaching this office carries a full-page advertisement of a charm that "secures employment to the unemployed," gives "success in law-suits," "realization of your fondest dreams of love and marriage," "victory over enemies," "sure relief in chronic diseases," and "body-guard against dangers, accidents, witchcraft, etc." The price varies with the number of the above items covered by the charm, ranging from \$10. to \$50.

Landlords of apartment houses in San Francisco are offering free medical, surgical and hospital service to tenants who pay their rent in full on the date when due.

A medical writer in Kansas, disgusted with the medical ballyhoo he hears on his radio, remarks wearily that "the day may come, and soon we hope, when one can sit by his radio and get a genuine and continuous thrill of Wagnerian opera without being interrupted by a radio announcer who tells the audience of the air what it should take to make its bowels move."

An interesting plan is being tried out in a Mormon settlement in Western Canada. The town has about 2,000 people, who have voted to pay the two local doctors \$25 a year for each family, and in return the doctors guarantee complete medical and surgical care, even including major operations. Each physician receives about \$3,750 a year under this plan, beside occasional fees for treating families who do not join. The doctors and townspeople thus are both relieved of worry over unpaid bills. How the scheme would work in a larger community is, of course, another question.

The distress of some doctors in Great Britain is revealed in the report of an insurance company which had on its books 78 cases of panel doctors who had assigned panel fees amounting to \$175,000 a year to money-lenders. The money-lenders, in this way, secured an influence in the administration of medical benefit, not always used for the highest ends. An insurance committee is looking into the matter for further action.

A lot has been said about the falling death rate during the depression, but now another part of the picture appears. The Milbank Fund, in a survey of 514 children in a poor New York neighborhood, find that 40 per cent are undernourished. It is not necessary to tell the readers of this journal what that means in the way of future debility and propensity to illness among these starvelings. Here is a future health problem ready right now for preventive treatment.

# NEUROLOGICAL AND MENTAL SYMPTOMS OF PERNICIOUS ANEMIA

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Read at the Annual Meeting of the Medical Society of the State of New York at New York City, April 4, 1933.

In order to understand the *neurological and mental symptoms* of pernicious anemia one must understand the disease and its pathology.

It is incorrectly described as a systemic disease; it should be described as a "three-system disease": that is, one which involves three different systems, the blood, the digestive, and the nervous. The percentage of involvement of these three systems, varies; nervous symptoms occur in 80 per cent; blood changes in 90 per cent, and digestive symptoms in almost 100 per cent. In the 80 per cent in which the nervous symptoms appear the changes involve all three parts of the nervous system—brain, cord, and periphery.

The *pathology* of the disease is briefly as follows:

The cord is white, shining, enlarged, and swollen. The typical lesion is one of degeneration. It begins with small patches in the white matter of the cord, which extend and coalesce. These patches may extend upward, downward, or, as is more likely, may assume an annular form. Collier considers that the annular type of degeneration is the more frequent and the more characteristic. Several of these patches may coalesce, destroy the cord, and form cavities. In addition there occur secondary degeneration of the white columns, and retrograde changes in the cells of Clarke's columns.

These patches of degeneration are not limited to the cord, but they also invade the medullary substance of the cortex of the brain; here they are smaller, more scattered, and less likely to coalesce. In the brain there are also found small areas of edema, degeneration of the pyramidal cells, and minute hemorrhages.

In the peripheral nervous system the changes consist of swelling of the medullary sheaths followed by degeneration and disappearance of the axis cylinders.

From this it is evident that the neurological symptoms depend upon two factors: (1) the distribution, and (2) the extent of the pathological changes. Since the disease is chronic, of long standing, and from time to time tends to progress, the clinical symptoms vary. Because all three parts of the nervous system are involved, the picture appears confused and bizarre.

The neurological symptoms are of two kinds: sensory and motor. The sensory can best be divided into two headings, subjective and objective. The subjective are: tingling, numbness, burning, cramps, soreness, coldness, twisting, band, dead, and girdle sensations. The objective are loss of deep sensibility, loss of joint sense, loss of vibratory sense, astereognosis, and hypesthesia. The sensory symptoms are the more characteristic of the two. They are more frequent, appear earlier, and are of more prognostic and diagnostic value than are the motor; they may be slight or severe: they may appear early or late.

The motor symptoms occur less frequently, appear later and progress more slowly than do the sensory. They consist of weakness, ataxia, and mild or severe paralysis and paraplegia.

While ataxia and weakness are common in the early stages of the disease, paraplegia is, undoubtedly, the most frequent motor symptom, especially, in the later stages. It may occur early; it may be flaccid, spastic, or ataxic. It may affect the arms, or legs, or both. It is usually insidious in onset, gradual in development, and unless arrested, steady in progress. It may remain stationary, it may improve, or it may progress to a condition of complete paralysis.

In unusual instances the motor symptoms precede the sensory and the arms weaken before the legs. In still rarer instances the paralysis may involve the trunk or some of the viscera.

The reflexes in pernicious anemia vary according to the stage of the disease; there is first the irritative form, later the paralytic. At the beginning one column may be involved; later two or more. When the disease is well established, the pathological changes assume the characteristic "annular configuration" which results in an almost complete transverse lesion of the cord. Thus pernicious anemia may present a picture of tabes, of lateral sclerosis, of a transverse myelitis, or as a result of changes in the peripheral system it may simulate the symptoms of multiple neuritis.

The knee jerks therefore may take any form; they may be present, hyperactive, markedly exaggerated, diminished, absent, or unequal; they may vary from time to time. They may reappear after being lost, due, first, to an involvement of the posterior columns and later to an involvement of the lateral columns.

The Babinski reflex is often present, owing to an involvement of the pyramidal tracts.

An important and interesting question which always arises in pernicious anemia, and one to which not enough attention has been given, concerns the relationship of the nervous symptoms to the changes in the blood. It may be stated as a fact, to which all authorities subscribe, that one of the four conditions may exist.

(1) The blood changes may precede those of the nervous system.

(2) The nervous changes may precede those of the blood.

(3) The two may appear at the same time.

(4) The blood changes may appear very late or not at all.

I should like to emphasize the fact that nervous symptoms, either motor or sensory, may, and often do, appear long before the blood gives any indications of the disease; therefore, many patients who complain of paresthesia in the extremities, and especially in the legs should be considered as tentative cases of pernicious anemia.

A diagnosis of pernicious anemia from the nervous symptoms, is difficult. It resembles syphilis in that it tends to mimic other diseases, and presents many syndromes. On the other hand, it differs from syphilis in that the nervous system is involved in 80 per cent, whereas in syphilis severe nervous signs appear in about 10 per cent.

In pernicious anemia the nervous system is more apt to be involved in the elderly than in the young. It is also more apt to be involved in certain families than in others.

#### MENTAL SYMPTOMS

Mental symptoms are common in pernicious anemia.

Cabot reported psychoses in 16 per cent. Wisenberg definite psychotic changes in 40 per cent. Barrett found 33 per cent of the ambulatory cases abnormal, and the Mayo Clinic stated that "mental changes are very striking."

These mental changes are of two kinds: those which occur early in the disease, and those which occur late.

The early mental changes, which may precede all other symptoms, are apathy, indolence, abnormalities of conduct, indifference, and a definite lessening of the capacity for work. Later, the mental changes assume a more definite form; the patient may develop any type of psychosis from melancholia to mania or dementia.

There is no psychosis characteristic of the disease; in the older patients the senile type

is common, with attendant symptoms of confusion, loss of memory, and violence. The most usual form is the so-called paranoid type. The interesting point about the paranoid symptoms is their resemblance to the toxic psychoses. Barrett in making a study of the delusions concluded that they were similar to those occurring in exhaustion and toxic cases and, therefore, assumed that the etiological factor was toxic. The question which then arises is whether these mental symptoms are due to pathological changes in the brain or to the toxins generated by the disease. This question is open to argument. If the mental symptoms in pernicious anemia are temporary and apt to yield to treatment, the conclusion must be that they are the results of ischemia and toxicity, rather than to degenerative changes. Another point to consider, as Weil has pointed out, is, that the early and superficial lesions of toxemia and ischemia, if left alone, may result in pathological changes. This viewpoint is strengthened by the frequency with which the delirium appears. Cabot found it in 44 per cent.

Still other authorities insist on the existence of cerebral lesions as the etiological factor, but they are unable to explain the tendency of many of the cerebral symptoms to disappear under treatment.

The frequency and the variability of the mental changes which characterize this disease causes pernicious anemia to assume importance, from a medicolegal point of view. Hulett reports the case of a patient who developed a paranoid state with delusions of persecution directed against a devoted daughter. This patient disinherited the daughter, who brought suit to break the will and succeeded because of the medical testimony, which proved that patients with pernicious anemia are subject to mental aberrations. Other authorities cite cases in which the patient became brutal to his wife and stole without any memory of the facts.

In conclusion I want to emphasize five points.

(1) That pernicious anemia is a three-system disease.

(2) That any of the three systems may be involved first.

(3) That the neurological symptoms of pernicious anemia are both motor and sensory.

(4) That mental symptoms are frequent and varied.

(5) That the cause of the mental symptoms is open to argument; it may result from pathological changes in the cortex and other parts of the brain; it may result from toxemia.

THE INFLUENCE OF NATURAL CARBONATED MINERAL WATER BATHS  
ON BLOOD PRESSURE AND PULSATION

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The evaluation of any method of treatment is based in a large measure on the clinical results obtained by the use of the treatment. No extensive clinical study has been reported in this country regarding the value of balneotherapy. The following question is generally raised when balneotherapy is mentioned "What is the clinical effect of a series of baths on the patient who receives this treatment?" In order to answer this question with some degree of accuracy it is necessary to make long and detailed clinical observations of a large number of patients who are taking the treatments.

There are, of course, many reports in the literature regarding the influence of the famous natural carbonated baths in Europe. It is impossible to say without careful studies that the same results may be expected with the waters here as are obtained abroad and it becomes necessary to make our own observations in order to answer the question which is so commonly asked. The material on which this report has been based, was a group of 102 patients who received series of baths during the summer of 1932 at the State Reservation Bath Houses at Saratoga Springs. The patients were under the care of local physicians who directed their course of treatment during their stay in Saratoga. The treatments were mainly mineral water baths, using the natural mineral water from the Lincoln Springs which is supersaturated with carbon dioxide. The observations of the blood pressure and pulse were made by the authors during this period. The review of this material points out the course which may be followed in studies of this type. In the small series to be reported, of course, no final or general conclusion may be drawn, but the consistency with which certain changes were ob-

served will be shown in the report of the summary of this work.

**Sex and Age Distribution**—Of the 102 patients who were observed during the summer, 11 were males and 61 females. In Table I is presented the distribution of this group as regards age. It will be seen that over 40 per cent were in the decade between 50 and 59 years. This is an average group of patients who come for treatment and shows the age when people feel the necessity for treatment of this type.

**Clinical Diagnosis**—In the group chosen for these studies 66 patients, or 64.7 per cent of the total, had some primary cardiac or circulatory disorder. The relatively high percentage of this type is due to the fact that the patients selected for the study were mainly those receiving the Saratoga cardiac therapy and that our studies dealt primarily with blood pressure variations. In a general survey of the patients who come to Saratoga for treatment, approximately 30 per cent are classified as cardiac patients. The remaining 36 patients selected for this study included 18 with arthritis, 5 with urinary disorders, 4 with chronic gallbladder disease, 1 with obesity, 3 with diabetes, and 2 with other conditions.

**Blood Pressure**—An analysis of the records of 88 patients for whom detailed data regarding variations in blood pressure were obtained revealed that the systolic blood pressure at the beginning of treatment was under 120 mm Hg in only 9 patients of the group, while 52 patients, approximately 60 per cent, had blood pressures above 150 mm Hg, and 21 of these 52 were in excess of 200 mm Hg at the start of their cure.

TABLE 2—A COMPARISON OF THE CHANGES OF SYSTOLIC AND DIASTOLIC BLOOD PRESSURES TAKEN AT THE BEGINNING AND END OF THE TREATMENT

Changes in pressure	Systolic		Diastolic	
	Num ber	Per cent	Num ber	Per cent
+11 to +30 mm Hg	11	12.5	5	5.7
+10 to +10 mm Hg	43	48.8	17	19.3
+11 to +30 mm Hg	27	30.7	1	1.1
31 or more mm Hg	7	8.0		
Total	88	100.0	88	100.0

The changes in their systolic and diastolic pressures were followed during the course of treatment. Studies of the blood pressures

TABLE 1—AGE DISTRIBUTION BY DECADES OF THE PATIENTS OBSERVED

Age distribution	Male	Female	Total
Under 20	2	0	2
20-29	1	0	1
30-39	5	5	10
40-49	10	7	17
50-59	12	29	41
60-69	9	7	16
70 or over	2	2	4
Not recorded	0	11	11
Total			

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were carried out in the following manner: the patients undergoing treatment came to the baths in the morning and were allowed to rest for 15 to 30 minutes before taking the initial blood pressure. Then they took the bath as prescribed by their physician and following the bath rested for a period which varied from 30 to 60 minutes. The second blood pressure reading of the day was taken at the end of this rest period. In this way we obtained a series of blood pressure readings taken before and after the bath. The material presented in Table 2 deals with changes which occurred during the course of treatment and not with the individual bath; it includes a brief summary showing the number of patients and the percentage of the total number classified on the basis of variations which occurred in their systolic and diastolic pressures. In this series, approximately 39 per cent showed a reduction in their systolic pressures of 11 or more mm. Hg, and approximately 20 per cent showed a similar change in their diastolic pressures. This analysis includes the whole series observed, regardless of whether their blood pressures were elevated at the beginning of the course or not.

TABLE 3.—AN ANALYSIS OF THE VARIATION IN BLOOD PRESSURE OF THE PATIENTS WHOSE SYSTOLIC BLOOD PRESSURE AT THE BEGINNING WAS 150 MM.Hg OR OVER

Systolic pressure at beginning	150-199		200+		Total	
	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
+11 to +30 mm. Hg	3	10.7	3	12.5	6	11.5
+10 to -10 mm. Hg	10	35.7	9	37.5	19	36.5
-11 to -30 mm. Hg	11	39.3	9	37.5	20	38.5
-31 or more mm. Hg	4	14.3	3	12.5	7	13.5
Total .....	28	100.0	24	100.0	52	100.0

A more detailed analysis was made of the variations in blood pressure during the course of treatment of that group with systolic pressures above 150 mm. Hg at the start of the treatment. In Table 3 the patients are classified on the basis of the systolic blood pressure at the beginning of the course and divided into two groups: those with blood pressures between 150 and 199 mm. Hg, and those with pressures of 200 mm. Hg or over. Variations of less than plus or minus 10 mm. Hg were held to be without any definite significance. It may be seen from the table that 38.5 per cent of the patients showed a reduction in their systolic blood pressure of between 11 and 30 mm. Hg and that 13.5 per cent showed a reduction of 31 or more mm. Hg. Therefore, on the basis of this analysis, we found what may be considered definite reductions in blood pressure of 52 per cent of the patients studied. On the other hand, 6

patients, or 11.5 per cent, showed an elevation during the course of treatment. When we consider the data for the patients with moderate increases in blood pressure, 150 to 199 mm. Hg, as compared with those over 200 mm. Hg, we find relatively little difference in the percentage of patients showing definite improvement.

A consideration of the changes in blood pressure in relation to the number of baths taken in the series showed that 4 out of the 6 patients in whom a definite elevation occurred during the treatment received less than 10 baths in their course, while 17 of the 27 who had a definite reduction in blood pressure took 10 or more baths. The data regarding the number of baths taken in the course are not sufficient to reach any definite conclusions but there is the suggestion that for the most consistent results, the patient should have a series consisting of more than 10 baths.

Other factors which must be considered in relation to the changes reported are the amount of carbon dioxide in the bath, the duration and the temperature. Information available for this series does not provide a basis for comparison of different temperatures or different lengths of time in the baths because nearly all the patients studied took baths between 92° and 96° F. and on the average remained in the tub from 12 to 15 minutes. The question of the amount of gas in the water, which may be varied, depends on the condition of the patient. It was found that 23 out of the 27 patients who showed definite reduction in their blood pressure took baths containing more than half of the effective supersaturation of the carbon dioxide, while those patients who showed an increase in their blood pressure took consistently less than half the effective supersaturation. The question of the best amount of gas in the water to obtain the desired results depends on many other features than just the variation of blood pressure and it must be prescribed on the basis of the general condition of the patient. From the information at hand, however, it appears that better results may be expected with the relatively higher gas content in the water.

*Influence of the Individual Bath on Blood Pressure.*—In the analysis of the individual bath on the blood pressure, a calculation of the average of the differences between the systolic blood pressures taken daily before and after the bath was made for 66 patients. It was found that 51 of these 66 patients showed a reduction in blood pressure which varied in the group studied from 1 to 20



mm. Hg, while 15 showed increases in blood pressure which varied from 1 to 10 mm. Hg. On the basis of our method of study it is impossible to say that these changes are directly the result of the bath because it is common knowledge that a period of rest may result in some reduction in blood pressure. The longer period of rest which the patient had before the final blood pressure reading may account in part for these findings. It is only possible to say that the bath and the rest period following it resulted in a daily fall of blood pressure in 77 per cent of this group of patients.

**Pulse Rate.**—The pulse rate was observed in this system of treatment before, during and after the bath. The material to be presented is divided into two types. In the first, the pulse rate at the beginning and end of the whole cure has been compared on the basis of the pulse rates observed after the

minute, which was considered within the normal variation; 13 patients showed a reduction in pulse rate of 6 or more beats per minute. Again as was explained in connection with the variation in blood pressure, this reduction in pulse so generally observed may have been associated in part with the period of rest which followed the bath. However, the relaxation and beneficial rest are favorably influenced by the action of the carbon dioxide during their period in the bath.

### Summary

It has been pointed out that the variations in pulse and blood pressure as reported above were a series of observations made during the course of a regular spa treatment. This course included the mineral water bath with subsequent rest period, absence from home, and regular living. The treatments were associated also with drinking of the mineral water. The natural carbonated mineral water bath has certain influences on circulation. It produces a peripheral dilatation of smaller blood vessels with consequent increase of the amount of blood in the area adjacent to the skin. This effect is due to the action of the carbon dioxide either directly following absorption through the skin or indirectly by producing nervous reflexes or both.

The results obtained appear to be a regulatory effect most likely produced through the autonomic nervous system. An elevated blood pressure may be due to an overactivity of the sympathetic division of the autonomic nervous system or to an underactivity of the parasympathetic division. In either case it leads to an unbalance of the sympathetic-parasympathetic systems with resultant predominance of the sympathetic division, which gives rise to the increased pressure. Tachycardia may also occur. If the action of these baths is vagotonic, as claimed by various writers abroad, then the results reported can be interpreted as a return toward normal of this sympathetic-parasympathetic balance. A conception of this nature would explain the reduction in blood pressure, the slowing of the pulse rate and general improvement of cardiac function, which was observed in many patients.

The impression was gained by the authors in the observations on these patients that the improvement was most noticeable in the patients where some nervous influence could account for the increased blood pressure. In contrast, where sclerosis of the arteries was present, the blood pressure remains above

TABLE 4.—A COMPARISON OF THE VARIATIONS BETWEEN THE RESTING PULSE TAKEN AT THE BEGINNING AND END OF THE CURE

Systolic blood pressure changes in pulse rate	Under 150		Over 150		Both	
	Number	Per cent	Number	Per cent	Number	Per cent
+16 or more	2	5.6	1	1.9	3	3.4
+16 to +15	2	13.8	2	3.9	7	8.0
+5 to +15	18	50.0	33	67.3	53	60.2
+6 to +15	10	27.8	8	15.4	18	20.4
+16 or more	1	2.8	6	11.5	7	8.0
Total	36	100.0	52	100.0	88	100.0

bath. In Table 4 is presented the summary of these observations. It will be seen that approximately 60 per cent of the patients showed no significant variation in pulse rate, with a change of less than 5 beats. Approximately 11 per cent showed a pulse which was slightly higher and 28 per cent showed definite reduction of 6 or more beats per minute. The failure to find any marked variation in the rate of the pulse in this series is due to the fact that many of the patients who were studied showed a pulse rate of between 65 and 80 at the start of the cure. With a pulse rate in this normal level one could expect no striking variation. There were not a sufficient number of patients with definitely elevated pulse rates to warrant a special comparison in these cases.

The second type of analysis of the pulse was similar to that made with the blood pressures and was based on the change in the pulse rate recorded before the bath and that taken after the bath. In general, only 2 patients of the total series showed definite increase in pulse rate when the averages of the difference between the two recorded pulse rates were compared; 34 patients showed a reduction of less than 5 beats per

normal and shows relatively little reduction as a result of this course of treatment.

The review of the data presented in this paper has shown that the course of treatment is beneficial in the treatment of patients with cardiac conditions resulting from the unbalance between the two divisions of the autonomic nervous system. Other indications from the standpoint of the circulatory disorders include early myocardial weakness before the stage of decompensation is reached, convalescence from coronary thrombosis after the preliminary period of strict rest of three to six months is past, angina pectoris, and various functional disorders. It is contra-indicated in patients with severe decompensation, advanced syphilitic heart disease, severe cardiac asthma and bacterial endocarditis.

In conclusion, a definite reduction was noted in the systolic blood pressure in approximately one-half the patients in this small series who had a pressure of over 150 mm. Hg at the beginning. Reduction in the pulse rate of one-quarter of these patients also indicated improvement. As the pulse rate in the large majority of these patients was between 65 and 80 at the beginning, one could not expect any striking change in the rate. In addition, improvement, which could not be evaluated by the changes in blood pressure or pulse rate was observed clinically in the large majority of these patients.

Spa treatment, including the naturally carbonated mineral water bath, rest, diet regulation, change of scenery, and freedom from cares, is an important adjunct in the treatment of chronic cardiovascular conditions.

15 SPRING STREET

## THIS AND THAT

The lid has been clamped down in Germany on patent-medicine advertising that claims to cure grave diseases and encourages self-treatment. Advertising medicines that "never fail to help cancer, diphtheria, lupus, tuberculosis, epilepsy, arteriosclerosis, etc., is barred. Lay testimonials are ruled out, and even doctors' testimonials must be solidly backed by proof.

Physicians in Toronto have agreed to attend unemployed relief patients at one-half the regular fee, of which two-thirds will be paid by the province and one-third by the city. No physician is to receive more than \$100 a month from this source. It is considered much better, from a mere financial viewpoint, to pay doctors a minor fee to treat ailments in an early stage, rather than to let them grow more serious and require long hospital treatment at public expense.

Many New York State physicians are unaware of the fact that they are entitled to the residential rate on their office telephones when their offices are located in their residences. The State Public Service Commission has ordered that the residential rate, rather than the higher business rate, shall apply on the telephone of a physician, surgeon, osteopath, chiropodist, optometrist, chiropractor, Christian Science practitioner, veterinary surgeon, nurse or physiotherapist, when the office is in the subscriber's residence. One New York City doctor, on learning his rights, secured from the company a credit covering the overcharge for the four years he had paid the business rate.

Dr. Henry C. Sherman, Mitchill Professor of Chemistry in Columbia University and internationally known for his research and discoveries in vitamins, has been chosen for the William H. Nichols Medal for 1934. This award, presented annually by the New York section of the American Chemical Society, was announced by Professor Victor K. LaMor, chairman of the jury of selection.

The medal will be presented to Professor Sherman on March 9 at a meeting of the Chemists' Club, 52 East Forty-first Street, at which Professor Lafayette B. Mendel of Yale and Dr. C. A. Browne of the United States Department of Agriculture will speak.

The lowest death rate in the history of New York City in 1933, the fourth year of the depression, is shown in the annual report submitted to Mayor O'Brien by Dr. Shirley W. Wynne, retiring Commissioner of Health. Dr. Wynne attributed the results to "practical, realistic, long-range planning."

In showing that the city's death rate had been reduced to 10.23 for each 1,000 of population in 1933 from 11.64 in 1928 when he took office, Dr. Wynne pointed out that if the 1928 death rate had prevailed there would have been 10,354 more deaths than actually occurred in 1933.

Contracts amounting to \$882,486 have been awarded for the construction of a state hospital for tuberculosis at Mount Morris.

## DIRECTORSHIP OF THE SCHOOL HEALTH PROGRAM

By IRLDRICK I. PAIRY, M.D.

Neuropsychiatrist, State Education Department, University of the State of New York

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, April 5, 1933

THE purpose of this paper is to formulate briefly what I consider a basic scaffolding in qualifications for the directorship of school health education and school health service. Reference to directorship in this paper refers only to a city, county, or large district school system, or a State Education Department. Under such a directorship, there should function in each school unit a local health supervisor who may be recruited from the ranks of school or public health nurse, physical educator or nutritionist; but this person should have had a special training in the principles of school health work.

Andrew Carnegie was once asked which of the three aspects of the steel industry was the most important: the mining of the crude material, the manufacturing process, or the selling of the product. This astute industrial magnate replied in substance: Which leg of a three-legged stool is the most important? This anecdote is related in order to throw a critical light upon the opinion expressed by certain leading educators to wit, that the director of school health should (1) be an educator; (2) an administrator; (3) he may, or may not, be a physician, but should have a thorough knowledge of health and have a sound point of view with respect to the interrelationships and functioning of the various subdivisions in such a set-up.

Let us scrutinize this tripod of qualifications of the proposed health directorship stool.

Let us assume that the person occupying this ideal stool be a "career man," one who intends to consecrate himself during his active life time to full-fledged service in health education and health service. It is important that we distinguish the "career" type of person from the "opportunist." The latter merely capitalizes health work, with full- or part-time service, as a stepping stone to some other chief ambition or work. Such a person is apt to be more concerned with the pay check, more interested in developing other interests, more eager to seek opportunities for personal, economic, or professional advancement in other fields of service. This type of person is not rare in school health set-ups and may be responsible for the frequent attitude shown by many educational administrators that the school physician must be tolerated but not necessarily cultivated.

In contrast to the sequence of qualifications suggested above, I feel that we should put first things first. The basic structure or corner stone on which depends the soundness and usefulness of the superstructure is that of medical training of a clinical nature which

qualifies a person to engage in private practice. The main thing is to *know* something. Methodology is of secondary, though complementary, importance.

The first leg of the stool, to my mind, may be unequivocally disposed of by making mandatory a physician's training and experience in order to gain best a full-bloom working knowledge of the biological sciences, health, pathologic and therapeutic aspects of the health director's responsibility. A course in medicine comes nearer to giving this basic training than a course in any other field. Furthermore, a layman or nonmedically trained health director is qualified to evaluate and criticize in sound perspective the functioning of the physician, to point out his technical professional shortcomings, or to weave into the medical inspection service, health conservation and promotion of preventive medicine, new knowledge and techniques gleaned from laboratory research, private or hospital practice as reported in medical journals and archives. In the case of the career type of director of school health there should be no ground for cavil. But in the case of those in the opportunist category, there may be room for argument from the administrative standpoint.

The second qualification should be pedagogical training of a one-year technical course in the principles, methods, history, and philosophy of education. In order to gain a liberal, cultural and academic background and perspective, the physician aspiring to the directorship of the School Health Program should have had the training or its equivalent of that usually recognized by the bachelor's degree in Arts or Science. Such an educational premedical background has been mandatory for some years for admission to our leading medical schools.

The third prerequisite for directorship qualification is that of administrative ability. Training in school administrative principles and methods may be combined with the purely pedagogical year; in fact, such training is an integral part of the teacher's training course. But let us not blind ourselves to the real issue at stake. We are not so much interested in units of credit or diplomas, but on the quality and effectiveness of educational and administrative service. Concrete performance, and not the labels we paste on a person, should be the chief criterion of fitness for the job. Administrators, like good teachers and good clinical practitioners, are born and not made. Specific training and experience, however, are desirable and oftentimes necessary to unfold such latent natural bent and potentialities. But the main things we wish to know are: what experience and with what success is a

person able to get along with others in profitably selecting personnel, in organizing and directing their work in an efficient and happy manner, be it in administration of a playground, gymnasium, hospital service, or a regiment of soldiers.

Since the director will be held responsible for the effectiveness of health teaching and physical education, as well as school medical and nursing service, he should become thoroughly acquainted with the content and methodology of each of these phases of his work. It is particularly important that he be in close touch with the medical examiners in the schools. He must be able to evaluate their professional skill and through his own example in medical examination, ability, methods, and relationships lead the way to a superior level of functioning. A working knowledge and perspective of interrelationships of all of these aspects of the director's work is essential in order to coherently unify the diversified part—functions of school health service and health education.

Just when this year of professional educational training had best be taken may be debatable. Personally, I feel that it may be taken to good advantage during the premedical years, either as electives or by spending a year in a school of pedagogy, since medical schools are not likely to establish a chair of education in the near future. However, such an innovation would have many advantages for the training of the physician to direct school health activities. On the other hand, this year in educational professional training may well be taken after graduation from medical school, preferably after a one-year internship in an accredited general hospital. Dr. John Sundwell has suggested\* that the satisfactory completion of this postgraduate training be recognized by the degree of Master of Science in Health Education.†

How are we to bring about what we conceive to be the best type of personnel functioning in school health directorship? In these days of professional competition and jealousy, it would seem that the physician functioning in such a rôle would have to win the approval and good will of educators who now hold the whip hand in the selection of personnel. This may be done best by rendering superior service to that of the nonmedically trained director.

The physician is not altogether to blame for his plight since educators by and large have made little or no effort to obtain the services of outstanding medical men or to attract or hold them by offering a salary at least commensurate with that obtained in other specialties of medicine. We cannot expect the school

superintendent to pay his health director a larger salary than he himself obtains. But the health director should at least have the rank and salary of an assistant superintendent, and in the case of a State Education Department, assistant commissioner of education. Although health education should be regarded as an interdepartmental function, yet for the purposes of organization it should be circumscribed as a separate bureau in the health set-up.

In passing, may I interject the opinion, which should go without saying, but has not in some quarters, that it is the height of organization folly to place the school physician subservient to or under the direction of a physical educator. Such a short-sighted relationship is bound to lead to dissatisfaction, inefficiency, lack of cooperation, and insubordination. In the case of the opportunist and part-time school physician he may with good discernment be placed under an assistant school superintendent; but the full-time school health director should himself have the rank of assistant superintendent.

Much could be done to bring about a more desirable hierarchy of personnel interrelationships and functionings by acquainting medical students with the professional possibilities in school health work, and in providing the essential training either during premedical and preclinical years, or after hospital internship. School physicians and health program directors already in service should obligate themselves and should be encouraged by school superintendents to improve their sphere of usefulness by taking summer courses and extension work in health teaching and health education. Health education should be regarded as a specialty of public health or preventive medicine which is a medical specialty comparable to eye, ear, nose, or throat. Medical schools cannot afford to nod their heads or blink in stolid indifference to this important development in a positive health program and thus leave the direction and control of health teaching in nonmedical hands. Machinery should be set up and put into operation whereby physicians who have the interest and aptitude to enter health service and health education as a career should have the advantage of theoretical and practical training and experience in the pedagogical aspects of health education. Teacher-training institutions should be utilized for this purpose until schools of public health and hygiene in connection with medical schools create chairs of courses in health education. Fellowships, comparable to those given to physicians electing a career in Public Health Service, should be made available to physicians who may wish to prepare for the directorship of a school health program. Educators should be sensitized to recognize the supreme importance of selecting medically trained educators to head up this important work.

\* The Nation's Schools, 10:51, 1932.

† For a further elaboration of the thesis presented in this paper, the reader is referred to the author's article, *Using Critical Common Sense in the Directorship of the School Health Program*. Medical Review of Reviews, 39:57, 1933.

# NEW YORK STATE JOURNAL OF MEDICINE

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## EDITORIALS

### Why Not More Committees On "High Costs?"

Now that the Committee on the Cost of Medical Care has gone on into the limbo of the past, we may well wonder why in the world the family's doctor bill was picked out for all the ado and to-do, and nothing done about all the other, bigger bills.

It would seem only natural, at least, that an investigation into the family doctor bill should be followed by an inquiry into the family automobile bill, usually about twice or three times as large. If the American "white-collar" class are suffering so terribly under the doctor bill, think of their agony under the automobile bill. But our statesmen at Washington are not appointing any committee to tour the land, at public expense, to probe the High Cost of Automobile Care.

Then there are other "high costs." Even the medical-cost committee put the family's tobacco bill at about the same figure as the doctor bill. So which one is to be reduced? Why, the doctor bill, of course. The logic probably is that it is natural for smoke to go up, while medicine always goes down.

Next we find that the family bill for candy, soda, ice cream, and chewing gum also figures up to about the same total as the bill of the physician who is supposed to make the system do its duty again after all the above have clogged it to a standstill. The difference is that the candy, soda and gum have to be paid

for in spot cash, while the doctor's gentle reminder is tucked away in a pigeonhole and forgotten. So what? Reduce the doctor's bill, naturally.

What about Committees on the High Cost of Silk Stockings, Underwear and Pajamas, High Cost of Movies, Vaudeville and Radios, High Cost of Hair Bleaches, Face Packs and Permanents? Worst of all is the high cost of supporting politicians at Washington and the various state capitals and city halls who make the high cost of government higher and higher every year.

These are the people who seem able to discover only one "high cost"—the cost of medical care! Let us have just one more investigation, this one to reckon how much it would cost the country to be without medical care! The "high cost" of our medical care would then stand out, clear as daylight, as the most economical expense America has today.

### Ways to Reach the Public

It is distressing to see hundreds and thousands of people dosing themselves with cure-alls that cure nothing and wasting their money on quacks and charlatans, and not be able to help them. It is like standing idly on the shore of a river and watching thousands drown who might be saved. Can nothing be done to remedy this tragical situation?

Not only can something be done, but something is being done by the Bronx County Medical Society. Dr. M. O. Magid, President of the Society, told about it in his inaugural address. The members of the Bronx Society have been speaking on the radio, and giving health talks and holding health conferences in the schools, for pupils and parents, and at health centers and meetings of fraternal orders. The public has responded encouragingly and is showing an increasing demand for health conferences.

The growth of this work can be seen in the fact that in 1931 only 8 physicians gave a total number of 36 talks, while at present 75 physicians are participating and the average number of talks is 30 per month. The weekly radio talks, Dr. Magid remarks, conform with the rules of the Medical Information Bureau of the New York Academy of Medicine, and the programs include a variety of topics, though tuberculosis and diphtheria prevention are stressed. The speakers also call attention to the dangers of self-treatment with

misleadingly advertised remedies. This is all in the interest of public health and in addition, says Dr. Magid, "it is our hope that when the public learns the authentic medical facts brought to them through a persistent campaign of education, the medical profession will become the recipients of a great part of 370 million dollars spent annually on patent medicines and of the 125 million dollars spent for the services of the chiropractors, naturopaths, and cultists who ply their trade among an uninformed public."

Another idea has occurred to Dr. Magid as he sees the "Christmas Club" advertisements in the windows of the banks. "Save for Christmas," they say, save for luxuries, save for gifts for other people. That is very praiseworthy, but why not another parallel campaign urging people to "Save for Sickness?" The banks would support it, sensible people would realize its value, and it would give people the money to pay for illness when it comes. Along with the advertising of the "Save-for-Sickness" campaign, useful information could be given on health topics that could be of value. If the public could be led, in this way, to cooperate with the medical profession, Dr. Magid believes that the community health would be raised to a higher standard and the profession materially aided.

### Now Is the Time for Action

It is to be hoped that every member of the Medical Society of the State of New York studied carefully the report of the Committee on Workmen's Compensation, published in full in our issue of January 15. It is the product of nearly a year's work by ten distinguished physicians, and aims to secure amendments to the present law that will protect the injured workman from the "notorious racketeer rings" that now prey upon him, and to provide adequate compensation for the attending physician.

But reforms like this do not get themselves enacted automatically, or ride through to the statute books on oiled wheels. It takes work, and more work, and then more work, and now is the time for action. The proposed amendments are the result of our best medical thought, and deserve the active support of our members, both individually and collectively.

Our lawmakers at Albany will listen with respect to any communication from the physicians in their districts, and the County Medical Societies and leaders of medical opinion

have a splendid chance here to help bring one kind of justice to the injured workers and the attending physicians, and another, rougher kind to the infamous racketeers who have been preying on the sick and the injured. Let everyone get behind this legislation and show what the physicians of the state can do when the occasion demands it.

### Editor for Fifty Years

It certainly would be hard to match the record of Dr. Lewis Stephen Pilcher, who is celebrating his golden jubilee this year as editor of the *ANNALS OF SURGERY*, which he founded in 1885. Dr. Pilcher was president of the Medical Society of the State of New York in 1892 and of the Kings County Society in 1900. His journal was the first surgical periodical in the English language, and is the official organ of the American Surgical Association, the New York Surgical Society, and the Philadelphia Academy of Surgery. Dr. Pilcher also has the distinction of being the youngest student ever to be graduated from the University of Michigan, where he took his bachelor's degree at the age of 17. He is now 89.

He is a Fellow of the American Surgical Association, and was its President in 1918; Honorary Fellow of the American College of Surgeons, the Philadelphia Academy of Surgery, the College of Physicians of Philadelphia, the New York Surgical Society, and the Brooklyn Surgical Society, and one time Commander-in-Chief of the Grand Army of the Republic.

### Doctors Who Don't Play Ball

The men who don't play the game, the ones who won't observe the rules, make havoc in any line of work. In medicine, it is the men who refuse to join the County Medical Society, or, if they join, do not pay their dues or attend the meetings. President Louis F. Garben of the Suffolk County Medical Society, recalled in his retiring presidential address the statement of President Roosevelt that a small minority could upset all the efforts of the NRA if not whipped into line. If 10 per cent resort to unfair or sharp practices, the work of the 90 per cent will fail. In the same way, said Dr. Garben, if 10 per cent of the doctors in any county refuse to work with

the County Medical Society, "these non-members can by unethical conduct and practices give the public at large a poor opinion of the entire profession in the county."

The cure for this situation, as he sees it, is to follow the example of Denmark, where membership in the county society is practically 100 per cent, and where the county societies can determine whether a given doctor is, or is not, allowed to practice. Expulsion from his medical society there is tantamount to revocation of his license to practice medicine. Dr. Garben would amend the Medical Practice Act here to give the county medical societies the same power. Then the medical wild-catters, if we may borrow the term from the oil industry, would be brought into line, to the benefit of the profession and the public.

These are days of sweeping changes, and our lawmakers seem ready to make advances such as they would never have made in previous years. Here is a suggestion for our legislative committees to consider.

### Mother's Day 1934

Mother's Day—May 13th—is to be observed by women's clubs, men's clubs, medical societies, chambers of commerce; and other professional and civic groups who will join in community efforts throughout the nation to "make motherhood safe for mothers." The Maternity Center Association of New York has taken a leading part in this noteworthy movement. We are glad to give space to the following announcement by the president of the organization, Mrs. Shepard Krech:

"In previous Mother's Day campaigns, the effort was to arouse the public to the fact that two-thirds of the maternity deaths in the United States are preventable; that 10,000 of the 16,000 women who annually die in childbirth could be saved. The next move, which is to be taken this year, is to do something quite specific and definite about it, with groups working in every community.

"Specific changes cannot be made to improve conditions until people study their own local maternity facilities, and determine just what is needed. The phases requiring attention may differ widely in various communities. The Maternity Center Association has undertaken to supply blank appraisal forms which will aid local groups of interested persons, medical and lay, in conducting investigations into the adequacy of what their own town or county is doing for mothers. Such questions as these are to be answered: 'Number of maternity beds?' 'Total number of births in the last year?' 'Number of deaths in the last year?' 'Is organized prenatal nursing service provided?' 'Is your hospital approved by the American College of Surgeons?'

"A great deal of sentiment has developed surrounding Mother's Day during the time that it

has been observed in this country. In the last few years there has been a successful effort to direct this fine feeling toward the important subject of saving mothers from unnecessary death. But emotion alone is not enough. We must have facts, pertinent facts, local facts, so that groups in every community may work with their own physicians, health officers, nursing associations, and hospital authorities to alter those factors in the situation which are a barrier to safe motherhood.

"Only by an appraisal of maternity facilities in every community, and a study of their quality, can the great step forward be taken. These blanks are available free. Prizes are to be awarded to those groups which have the highest rating for making a thorough-going survey and presenting a plan for improvement based upon that survey. Programs for club meetings are also available without charge, as well as publicity material for local Mother's Day campaigns designed to direct the sentiments surrounding this occasion into channels that will be productive of results in terms of human lives saved."

The address of the Maternity Center Association is 1 East 57th Street, New York City.

### Disagreement On Sterilization

An intelligent amount of sensible skepticism should be applied to the newspaper reports of wholesale sterilization in Germany. The first dispatches had it that 400,000 men and women were to be sterilized as physical and mental defectives who might transmit their weaknesses to their offspring to the injury of the German nation. This huge number has been whittled away in succeeding dispatches until it is clear that we must wait for more reliable information before we know what will happen.

We do not have to look to any foreign country, however, to see this plan in practice. It is now legal in 27 states of the Union, and has been sanctioned by the U. S. Supreme Court in the case of *Buck vs. Bell*. The Court's decision is cited by Dr. J. H. Landman in his informing work entitled "Human Sterilization" (Macmillan). This case had to do with the sterilization of Carrie Buck, a feeble-minded woman in the Virginia State Colony for Epileptics and Feeble-minded, of which J. H. Bell was superintendent. Carrie Buck was the daughter of a feeble-minded mother, an inmate of the same institution, and the mother of an illegitimate feeble-minded child. The decision of the Supreme Court was written by Justice Holmes. He said, in part: "It is better for the world, if, instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. . . . Three generations of imbeciles are enough."

All cases are not so simple, however. History has enough examples to confirm the poet's line, "Great genius is to madness near allied." In one decade Darius Green, with his flying machine, is a fool or a lunatic. In the next, Wilbur and Orville Wright are geniuses. In one decade a man is a criminal because he breaks a law that is repealed in the next. The law is repealed, and he may be released, but if he has been sterilized, his rights cannot be restored to him. In Dr. Landman's opinion criminals should not be subjected to compulsory sterilization, for crime is "nothing but the evidence of a maladjustment between the individual and society" and "criminality itself is not inherited." If the criminal has hereditary feeble-mindedness or mental disease, then he should be sterilized to halt the evil heritage, but not for his criminality, for Dr. Landman holds that to be an acquired trait. "So, too," he adds, "the blind, the deaf, the deformed, the paupers, the inebriate, the lepers, the syphilitic, the drug fiends, and others are the socially inadequate classes in our society that have primarily acquired their deficiencies. They do not transmit their shortcomings, as such, to their offspring. They ought not to be sterilized. They need vocational, mental, or medicinal therapy. Where, however, in individual cases of these classes, the insufficiency was inherited and will be transmitted—then the potential progenitors of these weaknesses

should be sterilized. The human sterilization program provides for the sterilization of individuals—not classes—whether they be social, economic, political, or religious classes."

Segregation, rather than sterilization, is the best remedy, Dr. Landman believes, for it would do everything that sterilization does in preventing propagation of these social unfit and would "remove the many dangers to society which would arise from their freedom."

On the other hand, many of the best physicians in the States having sterilization endorse it strongly, and it is reported gaining in favor in Great Britain and other European countries. It is a vital subject and should have the guidance of our best medical minds and not be left to the decision of political office holders and of ignorant, if well-meaning, social theorists. The British governmental committee which has been considering this matter unanimously recommends voluntary sterilization to remove the dead weight of social inefficiency and individual misery entailed by the existence of more than 300,000 mental defectives. Compulsory sterilization is unanimously rejected. The mass of defectives is being steadily recruited, the committee declares, and "without some measure of sterilization these unhappy people will continue to bring into the world unwanted children, many of whom will be doomed from birth to misery."

### The Thomas W. Salmon Memorial

The Committee of the New York Academy of Medicine in charge has set forth in a report by Dr. C. C. Burlingame to the Annual Meeting on January 4th, 1934, its decisions and actions in administering the fund.

In pursuit of the purpose of the Memorial to aid "the better treatment and prevention of mental disorders and promotion of mental health," the Committee has chosen Dr. C. Macfie Campbell, Professor of Psychiatry at Harvard University, to deliver the Memorial Lectures on April 13th, 20th, and 27th, 1934.

Subsidies have been granted to the following research projects:

Miss Muriel T. Bashlow, Judge Baker Foundation, for studies on psychometric results of clinical psychotherapy in cases of emotional blocking among juveniles.

Dr. Clarence O. Cheney, New York Psychiatric Institute, for endocrinological studies in psychiatric patients.

Dr. Franklin G. Ebaugh, Colorado Psychopathic Hospital, Denver, for studies on treatment of epilepsy with emmenin (the name applied by Pro-

fessor Collip of McGill University to a hormone study of therapeutic approaches to enuresis.

Dr. Norman Fenton, Bureau of Juvenile Research, California, for a study on the mental and social traits of 400 boys in a State Correctional School and the relationship of these traits to later behavior on placement.

Dr. John Levy, New York, for an experimental study of therapeutic approaches to enuresis.

Dr. Jacob Kasanin, Clinical Director, State Hospital for Mental Diseases, Howard, Rhode Island, for the purchase of an oscillogram for investigation of the peripheral circulation in schizophrenia.

Dr. James L. McCartney, Director, Classification Clinic at Elmira, New York, for a classification of prisoners.

Dr. Lloyd H. Ziegler, Professor of Psychiatry and Neurology at Albany Medical School, for a study of psychopathic effects and their relation to the surface temperature of the body.

The Editorial Board of the Archives of Neurology and Psychiatry, for the reprinting and distribution of certain articles dealing with the training of the neurologist and psychiatrist.



# CORRESPONDENCE

Anonymous letters will not be noticed. All communications must carry full name and address of the writer, but these are omitted on request.

Thanks!

The Editors of the JOURNAL have received a great number of suggestions and criticisms, and they wish to thank their subscribers for the interest shown in the new form of the JOURNAL. Because of the limitations in space, it is possible to publish only a few of these letters here.

In response to a number of suggestions the Editors have decided to use a larger type size beginning with the issue of February 15th.

In the meantime, any further suggestions for the improvement of the JOURNAL will be gratefully welcomed.

## A New Crusade Suggested

To the Editors:

My compliments on the JOURNAL in its new format. I think that it is ever so much more attractive than it was in the old form. I read with particular interest the note from a medical writer in Kansas who expressed the hope that "the day may come, and soon, we hope, when one can sit by his radio and get a genuine and continuous thrill of Wagnerian opera without being interrupted by a radio announcer who tells the audience of the air what it should take to make its bowels move."

Of course, the proprietary medicine people have taken advantage of the new mode of publicity, quite as they did of the newspapers and other means of publicity years ago. I recall that one of the first special articles that I wrote for a medical journal when an assistant editor some thirty-five years ago, was with regard to the abuses of medical advertising. The case seemed hopeless then, and yet after a while there came a time when reputable newspapers refused to accept medical advertising.

The medical profession made itself felt in that crusade to excellent effect. Why shouldn't we do it again, and why shouldn't the new NEW YORK STATE JOURNAL OF MEDICINE be the pioneer in this new crusade?

JAS. J. WALSH,  
110 W. 76th St.,  
New York, N. Y.

To the Editors:

Congratulations on the new format of the STATE JOURNAL: it is easy to handle, and easy

to read, and its editorials are worthy of emulation by many other medical publications.

Doctor Heyd's editorial on the present hospital and dispensary situation is filled with common sense, and should be read by every Medical Board and Board of Trustees of our hospitals and dispensaries.

The book reviews are splendid, even if they are all commendatory: may I suggest than an item or two, or a short article on the lighter side of medical work would be acceptable to many of us. Congratulations and hope you can keep up to the standard of Volume 34, Number 1.

DR. JOSEPH BAUM.

Asks Advice on a Hard Problem

To the Editors:

A newspaper recently stated that a Committee had been appointed by Governor of the State to investigate the Workmen's Compensation Law and make suggestions for its revision and improvement. Lately, the writer had had two annoying experiences. He feels that the citation of the facts in his case may guide the members of the Medical Society of the State of New York. He asks that this entire communication be published in an early issue of the JOURNAL.

The Great American Indemnity Company, through one of its local

representatives phoned and asked me to examine a workman carried by their Company. The report was rendered and a bill sent. The bill was not paid. A hearing was held before one of the Compensation Commission referees and the claim was disallowed because it was said to be a contract between the insurance company and the writer. The referee very kindly stated that the writer's recourse was to common law.

The second case was with the Indemnity Company of North America. An employee was sent by his employer with a letter directing me to care for him. Treatment was given and the recovery was complete. The carrier refused to pay the bill. The referee stated that because the employer had asked for my services it was a contract between employer and physician and not between the insurance carrier and the physician.

The referee was asked how the physician might protect himself under these conditions;

(Turn to page 118)

# SOCIETY NEWS

## Committee on Public Relations

While no less than eight important subjects are engaging the attention of the Committee, it is desired that the County Societies and the membership at large focus their thought on one particular matter at this time; that is, the worth of Surveys of Efficiency of Public Health Organization within County limits.

The Jefferson County Medical Society requested and secured such a "survey" for Jefferson County through the medium of the State Department of Health. That survey revealed enough defective conditions to bring the newspapers into the field. The press advocated a publicity campaign to remedy these defects.

This Committee believes that here is an opportunity for County Societies to assume leadership in improving the supply of health services to the population of their Counties. It is also of the opinion that the County Societies would do well to call to their aid help from any source that might seem desirable.

Further study of this subject is being undertaken by a sub-committee consisting of Drs. W. H. Ross, Thomas H. Cunningham and George M. Fisher. In the meantime it is suggested that County Societies consider the advisability of making surveys along this line.

WILLIAM H. ROSS, *Secretary.*

## Errors That Hamper The Education of Deaf Children

BY ANNETTA W. PECK

*Executive Secretary, the New York League for the Hard of Hearing, Inc.*

EDITOR'S NOTE: "Hearing Problems Engage Cooperating Committees." Confusion and waste motion, it seems, are hampering the smooth working of the state machinery that operates to educate the children who are deaf or hard of hearing. These misunderstandings can be eliminated by a frank interchange of information and advice, and a campaign of enlightenment for this purpose is about to be launched by three cooperating committees. Literature will be sent to every physician in the State. A careful perusal of it, and preservation for future reference, will prevent the errors that now interfere with the work for these unfortunates. This article by Miss Peck tells what some of the errors are.

Information regarding the widely prevalent hearing problem will soon be placed in the hands of every physician in the State of New York through joint action of the New York State Medical Society's Committee on Public Relations and Public Health, their sub-Committee on the Deaf and the Hard of Hearing and the State Department of Education. This information will be released in compact printed form and will include a statement of facts and also recommendations for procedure.

The three cooperating committees named are convinced that family doctors and otologists are not, generally speaking, sufficiently well acquainted with the work now going on in the field of conservation of hearing, nor with conditions in schools for the deaf, of which there are three day and seven residential schools in the State. With regard to these special schools it would appear desirable to review the present law covering admittance on some kind of medical report from persons who may, or may not, be qualified to make such reports. It is also a common practice to admit children to these schools without any kind of otological examination. This practice could be checked by acquainting every family doctor and every otologist with the importance of reporting every case examined by them to the State Department of Education and by providing the State Department with a list of otologists who could be called upon to make examinations in their community for a definitely stipulated fee.

Another important point is that neither public welfare laws nor educational laws include or provide otological care of the children in schools for the deaf. Most schools, however, make such provision of their own initiative and through their understanding of the otological problems involved.

The second objective, which lies within the scope of conservation of hearing, deals with the medical care of children whose hearing is threatened (potential impairment) and those whose hearing is already permanently impaired. Both classes are large. From 4 to 10 per cent of our school children show some impairment of hearing. These figures are based on the findings of surveys made in different sections of the country as well as by the Bureau of Medical Inspection of the New York State Department of Education, and the extensive surveys in New York City and adjacent parts of the State by The New York League for the Hard of Hearing, Inc. Children in these two classes are considered to be

in special need of otological care, the first (potential), in order that their hearing may be conserved, and the second, in order that their hearing may be improved under treatment if possible, and in the case of permanent impairment, that further losses may be avoided, attention being directed to general health and nutrition as well as aural hygiene.

It should be noted that these latter children are what is called *hard of hearing*, that is, they have lost a part or even all of their hearing *after having been with normal hearing and having normal speech* naturally acquired and well established. Deaf children, on the other hand, are classified as those who were either born without hearing, or who lost their hearing *before speech was established*. One unfortunate consequence of the present procedure of admitting children to schools for the deaf on a report by unqualified persons is that 30 per cent of the children in such schools are not deaf at all, but hard of hearing. Confusion undoubtedly exists in the popular mind as to the difference between the deaf child and the hard-of-hearing child, so that many children with slight hearing impairments are unnecessarily receiving from the State the comparatively expensive education which is required to prepare deaf children for adult life. The clarification of hearing problems as planned by the committees named is a necessary foundation for constructive dealing with hearing problems and in itself will be a definite service to the physicians, educators, social workers, parents, and other taxpayers of the State of New York.

### Committee on Legislation Bulletin No. 2, Jan. 19, 1934

Since writing our last bulletin the following bills have been introduced:

Senate Int. No. 151—Byrne, (Assembly Int. No. 166—Cahill), adds new section to the Penal Law authorizing a society for prevention of cruelty to animals to seize animals abandoned or found wandering at large and on certificate of veterinary surgeon, destroy any diseased or disabled animal, and deliver any unredemmed animal to person other than owner. Referred to the Codes Committee.

We need have no particular interest in this bill, we are reporting it largely so that you will be familiar with it and not confuse it with an antivivisection bill which may later appear. This is definitely not an antivivisection bill.

Senate Int. No. 155—Berg (Assembly Int. No. 128—Condon), to amend the Education Law to permit restoration by Regents of license to practice medicine to a person paid

done after conviction of felony for misconduct in his professional capacity. Referred to the Education Committee.

You will recall that Senator Berg carried this bill last year. We effectively opposed its advancement on the ground that "misconduct," which the law provides shall be a factor in deciding whether a physician's license shall be restored or not, is determined by the Medical Society. We are the guardians of our own Code of Ethics and the law so regards us, but if this amendment were to be enacted into law the deletion would remove from us the decision as to conduct and leave it with the Board of Regents.

Assembly Int. No. 77—Theodore, adds new section to the Education Law, prohibiting certain acts in practice of medicine as selling articles or contents bearing mark or symbol pertaining to advertising or medical care or to any inducement relating thereto or employment by any person or group, other than licensed physicians, of any person other than a physician for the practice of medicine. Referred to the Education Committee.

Assembly Int. No. 81—Theodore, to amend the Civil Practice Act, giving preference to personal injury actions where plaintiff presents proof that he has not sufficient means to support himself or dependents and is physically unable to earn reasonable wages. Referred to the Codes Committee.

Assembly Int. No. 100—Hamerman; Assembly Int. No. 172—Flynn, Assembly Int. No. 178—O'Mara—three garnishee bills. Referred to the Judiciary Committee. The latter two are identical and are concurrent with Senate bill Int. No. 31, by Mr. Cilano.

Assembly Int. No. 108—Stewart, amends the General Municipal Law for payment of medical expenses to injured volunteer firemen or representatives in case of death and also to firemen temporarily incapacitated or disabled as a result of certain injuries. Referred to the Judiciary Committee.

Assembly Int. No. 215—F. M. Smith, to amend the Agriculture and Markets Law by requiring the licensing of persons who sample, handle or prepare milk or cream in making milkfat tests. Referred to the Agriculture Committee.

The law at present requires that persons making milk-fat tests must be licensed. This amendment also includes for licensure any who sample, handle or prepare milk for the tests.

Assembly Int. No. 221—Thompson, to amend the Agriculture and Markets Law, making it unlawful for a wholesaler, retailer, commission merchant or jobber to expose for sale

food stuffs in open containers placed outside a building or entry way unless they are so placed that no part shall be within 20 inches of level of platform or walk on which public is invited to travel. Referred to the Agriculture Committee.

Assembly Int. No. 224—Whitney, adds new section to the Agriculture and Markets Law, repeals 6-a, 6-b, Health Law, transferring to Department of Agriculture and Markets all powers and duties of Health Department for sanitary control and inspection of milk and cream. Referred to the Agriculture Committee.

The personnel of the four Assembly committees with which we have most of our dealings follows:

### CODES

Robinson of Tompkins	Parsons of Onondaga
Sheldon of Lewis	Haskell of Cortland
Dickey of Erie	Ross of New York
O'Mara of Monroe	Alterman of New York
Heck of Schenectady	Farrell of Queens
Brunstrom of Chataqua	Moran of Kings
Suitor of Niagara	Hawkins of Kings
	Schwartz of New York

### PUBLIC EDUCATION

Ives of Chenango	Murphy of New York
Lewis of Oswego	Fite of Dutchess
Averill of Wayne	Lewis of Richmond
Taylor of Orange	Bauer of Kings
Corwin of Schuyler	Gillen of Kings
Hamilton of Rockland	Farbstein of New York
Milmoe of Madison	

### PUBLIC HEALTH

Lewis of Oswego	Bauer of Kings
Pollard of Seneca	Doyle of Kings
Bush of Delaware	Kantowski of Erie
Ives of Chenango	Bernstein of New York
Burgdorf of Cayuga	Goldstein of Kings
Vincent of Broome	Lavery of Westchester
Murphy of New York	

### LABOR AND INDUSTRIES

Messer of Steuben	Berley of Kings
Miller of Tioga	Morris of Saratoga
Goodrich of Allegheny	Breitenback of Kings
Thompson of Orleans	Canney of Erie
Washburn of Columbia	Breen of Rensselaer
Rapp of Genesee	Kelly of Monroe
Corwin of Schuyler	

Our annual request that the committees of the County Societies develop a close liaison with their legislators can not be too forcibly expressed this year. With many new chairmen and with one-third of the personnel in the Assembly new, it is to be expected that persons and organizations that have had difficulty in securing legislation opposed by the Medical Society, will endeavor to do so this year, hoping that their arguments will be more effective with the new personnel.

Rather authentic information has reached us that the chiropractors have prepared and will have introduced a bill to provide for their licensure. Without doubt they will ask for an individual examining board and for exemption from the high requirements that they set, for a certain number of those who are illegally practicing in the state at present. Don't wait for the appearance of the bill before you begin discussing the matter with your legisla-

tors. Acquaint them with the fact that we have great pride in the educational standards developed by the Department of Education for the protection of the public against ignorant practitioners of medicine or preventive medicine, and secure from them when possible a pledge to maintain these high standards, for after all our opposition to chiropractic or any other cult lies not in the method or system so much as it does in the effort the practitioners of those schemes always make to lower our educational standards. When the bill appears we shall send you a careful analysis of it and probably will suggest at the time that you give as much publicity to our position in the matter as you find possible and convenient.

Have you read the report of the Governor's special committee to investigate compensation practices in the state? If so, what are your suggestions with regard to the preparation of amendments to the law? The committee that prepared the report is anxiously awaiting comments from the County Societies.

### Civil Works Administration

*The following letter has been received from the Legislative Bureau of our Society:*

Dear Doctor:

Since issuing our last bulletin with regard to medical service under the Civil Works Administration, we have learned that the United States Employees' Compensation Commission will take over the provision of medical care to employees under the CWA. We wrote to the Commission in Washington asking for authoritative information upon the matter and on January 8th received the following reply:

"The Commission is in receipt of your letter concerning the appointment of physicians for the care of injured employees of the Civil Works Administration in your vicinity.

"As the work being undertaken by the Civil Works Administration is presumably of a temporary nature, it is not intended to increase materially the number of designated physicians. On the other hand, in view of the widespread character of this work, the Commission is extending authority to local administrators to refer cases to private practitioners as well as physicians previously designated. Therefore, bills for services rendered injured employees of the Civil Works Administration by private physicians may be forwarded to the Commission, through the office of the local administrator, and will be given careful consideration."

And on January 11th we had the following communication from the Civil Works Administrator of the state:

"From: United States Employees' Compensation Commission

To: State Civil Works Administrators

Re: The Selection of Private Physicians for Compensation Work

"Please instruct your local administrations to consult the officers of their County or District Medical Societies at once to enlist the societies' cooperation as follows:

"1. Ask them to share with you the responsibility of preparing a list of the local physicians authorized to provide treatment to supplement Federal Government medical facilities

when these are not available or are inadequate. This list should include physicians in the locality (whether members of the local medical society or not) who are well qualified by training and experience to render compensation service, who are licensed to practice medicine in the state, and who desire to participate in this service under the regulations of the United States Employees' Compensation Commission. These regulations provide for fees not in excess of those charged by physicians generally to patients in the same income class as the injured person.

"2. Have them indicate on this list physicians who, by training and experience, are especially qualified to handle unusual and special types of cases.

"3. Request that they work out with you a proper plan, mutually satisfactory for distributing the compensation work among the physicians on the list in as equitable a manner as possible. Any plan should provide for the immediate treatment of emergency cases, and for treatment by physicians well qualified to handle the particular type of case.

"A cumulative record should be kept which will show the number of cases which have been assigned to each physician on the list."

It is suggested that every County Society prepare a list of the physicians who are ready and willing to treat employees who may need medical care. This list should be presented to the county CWA director. If he has occasion to refer patients, it is the intention of the Commission that he should allow the employee to select his family physician if he is on the list; if not, then to select some physician from the list.

Each sizable project will regularly have a first-aid director who will provide to the workers on the job first-aid education and facilities. If an accident occurs, he will take such measures as the men in the front-line trenches did and send the case home or to a hospital, where a physician from the certified list will be called to take care of it.

Physicians should immediately secure proper

information blanks from the CWA director. The compensation bureau is very exacting in its demands for information. In every county there are already some physicians who are doing federal compensation work. These men can remain on the list if they choose, but whether they do or not the County Society should prepare a list as stated above. There is no limitation to the size of the list, but the Society is expected to make itself more or less responsible for the serious intention and character of work of those whom it recommends. The Federal Government is willing to pay the fees that a physician would regularly get for services of the same character in private practice and, therefore, physicians should exercise care in preparing their bills.

This matter was submitted to the Executive Committee of the State Society at its monthly meeting on Thursday, January 11th. The Committee at the time passed a resolution that since experience has shown that psychologically and economically the best treatment of the sick is afforded under the case method, welfare workers and other public officials with the responsibility of providing medical care should be urged to secure it in this manner rather than by the employment of physicians on salary.

JOSEPH S. LAWRENCE,  
*Executive Officer.*

It is reported from Buffalo that actual authorization for the employment of twenty-six physicians has been announced and that the County Society seeks provision for four more. These men are to work two hours a day for six days in the week in the Dispensary of the City Hospital or to visit in their homes indigent dispensary patients who are unable to come to the Dispensary. The compensation is to be \$1.75 an hour. This rate was arrived at after consideration of the statement by the Committee on the Costs of Medical Care that the average net annual income of a physician is \$3,500.

### Dr. John Van Duyn Civil War Surgeon and World War Surgeon

To have practiced surgery for nearly 60 years is in itself an unusual feat. To have been an active surgeon in the Civil War, and again an active surgeon fifty-odd years later in the World War is an extraordinary record.

Dr. John Van Duyn of Syracuse, who died January 15th, 1934, at the age of 90, accomplished this extraordinary spread of war experience in surgery. During the intervening years he practiced surgery in Syracuse in such successful fashion that he had long been known affectionately as the "Grand Old Man," or simply as "Dr. John." He continued his active practice to the age of 85.

He was the oldest living alumnus of Princeton University, where he graduated in 1862. He joined the faculty of the College of Medicine at Syracuse when it was founded, and taught surgery and historical medicine there for more than half a century.

His experiences in the Civil War inspired a hatred of warfare that colored all his later life and he declared on his return from the World War that the whole business, despite all efforts at improvement, remained just as destructive, painful and cruel as it was nearly 60 years earlier.

The new Physical Therapy Department of the New York Polyclinic Medical School and Hospital was opened on Monday, December 11th, 1933. Many prominent physicians and

surgeons, as well as other guests were present. This department is located in the new clinic building of the Polyclinic Hospital, and is supervised by Doctor Richard Kovacs.

# COUNTY NEWS

## Albany

*Opposition to Berg bill* was recorded at the January 24th meeting. This bill gives the State Department of Education full power to restore the license to practice medicine and surgery to those individuals who through conviction of felony or misconduct in professional capacity have lost their licenses.

*Use of Chancellors' Hall for Undesirable Speakers on Medical Matters*—The Society protested to the Board of Regents against the use of the Hall by any person or persons for the purpose of addressing public gatherings on medical matters unless they are recognized authorities capable of advising and having the full confidence of the profession. This protest arose from recent use of the Hall by the head of a Sanitarium which had been severely condemned last spring in the columns of the JOURNAL OF THE MEDICAL ASSOCIATION.

## Dutchess Putnam

*Society Entertains Mayor Spratt of Poughkeepsie*.—George V. L. Spratt, newly elected Mayor, was entertained at dinner on January 13th. Judge Spratt had for many years been the legal counsel of the Society.

## Erie County

Elsewhere it has been noted that the physicians to serve in the Buffalo City Hospital Dispensary will receive \$1.75 an hour. The question has been raised whether this does not suggest State Medicine since the payment comes from the Government Agency, though the emergency feature of the situation is well recognized.

## Kings County

*Combined Scientific Study by Dentists and Physicians*.—Although not a formal "combined" meeting, the Kings County Dental Society has arranged for a Symposium which has the same effect. Dr. Joseph Colt Bloodgood, Johns Hopkins University, will present the medical aspects of "Oral Manifestations of General Systemic Diseases and Their Sequels," and Dr. Lester R. Cahn will give the dental viewpoint. The meeting will occur at 3:00 P. M. on February 15th, 1934, at the Brooklyn Cancer Institute, 109 Cumberland Street, Brooklyn.

## Nassau

*Should a County Society Assume the Responsibility of Making Nominations for Local Commissionerships under the Alcoholic Beverage Control Law?* The Nassau County takes the negative in the following resolution which was unanimously adopted on November 21st, 1933:

*WHEREAS*, the Constitution of the Medical Society of the State of New York clearly sets forth the purpose of the Society, "to secure enforcement of just medical laws, to enlighten

and direct public opinion in regard to the great problems of medicine" and *WHEREAS*, the Alcoholic Beverage Control Law, delegating to respective County Medical Societies the responsibility of nominations of local commissioners, assigns to the Society an action that is not concerned with a great medical problem and is outside the proper field of activity of the Society, and

*WHEREAS*, with the probable repeal of the Eighteenth Amendment, the County Societies will have their duties extended in this field, and

*WHEREAS*, the further discharge of such duties will tend to jeopardize the honorable professional standing which the Medical Society of the County of Nassau has sustained in its other activities, it is therefore

*RESOLVED*, that the Medical Society of the County of Nassau take a definite stand in regard to its activities in this politico-social problem, and it is further

*RESOLVED*, that this Society go on record as being opposed to further functioning in this field of activity, and it is further

*RESOLVED*, that a report of this action be transmitted to the Medical Society of the State of New York both by our delegates at the next Annual Meeting and in any other way that the Comitia Minora sees fit.

## New York

*A Step Toward Solution of the Dispensary Problem*.—During the year just passed the County Society found means to secure satisfactory and effective conferences between its Economics Committee and the Hospital of the County which has established sound and equitable principles for conducting Dispensaries that are satisfactory to both groups. These principles should go far to solve the general problem of the Dispensary and the private physician.

Excerpts from the Annual Report of the County Economics Committee follow:

"The Hospital group known as the Out Patient Committee of the Hospital Conference, the Chairman of which is Dr. Frederick MacCurdy, represents 65% of the total out-patient department admissions in New York County, fourteen hospitals all of which are members of the United Hospital Fund.

The matters agreed upon in mutual conference are as follows:

1. The function of the Out-patient Department was adequately defined: Namely—

A. Adequate medical care for all persons who cannot afford to pay for services of a private physician.

B. Cooperation with doctors and provision for teaching facilities for graduate and undergraduate physicians, nurses, and dietitians.

C. To provide investigation of the costs for the cure of disease.

2. The Economic standard of the financial

eligibility to be applied to patients for Out-patient department care.

(This standard was the standard presented by the Special Committee on Hospitals and Dispensaries of the Medical Society of the County of New York, a copy of which is enclosed.)

3. A common standard for reception and classification of applicants. A definite form for registrars and a school for registrars so that they may learn to adequately fill out this form.

Where necessary or where fraud is suspected, the Hospital applicant is to sign a proper affidavit.

4. A common denominator, to be worked out, for Out-patient admission and special charges, is necessary because of the wide variation in the fields of individual institutions. It was agreed that the basic principle to be observed in fixing fees for the clinic, both admission and special, was to establish rates that were non-competitive with the practicing doctor.

5. Central registration, it was agreed, was impractical and was postponed for further study.

6. *Pay of Physicians.*—It was recommended that the Conference go on record as favoring some method of paying the physicians working in the Out-patient department, if and when means to finance such an expense can be found.

7. *Hospitals Showing Profit.*—It was recommended by the Committee that the Hospital Conference go on record as recommending that no Out-patient Department should be operated on a profit. Furthermore, that some standard of bookkeeping, such as advocated by the United Hospital Fund be employed so that a standard procedure might be followed in all Hospitals and therefore similar bases of cost figures be developed.

8. *Professional Standards.*—It was agreed upon that professional standards should be developed and set up for minimum standards of Out-patients care and that Hospitals be graded according to the observance of such a standard. This should include limitations of intake, adequate records, sufficient clerical and nursing help.

All of these general principles were accepted in principle by the Comitia Minora of the Medical Society of the County of New York and by the full Committee of the Out-patient Department Committee of the Conference of Hospitals.

The details of each principle are at present being worked out in small Committees and will be the subject of the report for the year 1934.

The Committee on Economics introduced to the Comitia the recommendation that physicians working in Out-patient Departments of City Hospitals should be paid. The Comitia approved the recommendation, and the Committee on Economics is investigating the number of physicians, the basis of payment, and

the amount of additional expense it will be to the City of New York for payment of these physicians.

At an opportuno time, a bill will be introduced before the Board of Estimate, to include this sum in their budget for the coming year.

*Eligibility for Admission to Dispensaries:*

It was agreed that an unmarried applicant without dependents earning \$900 or less per year should be admitted for dispensary care. The following minimum schedule was considered a fair one to guide admitting officers in the matter of patient's financial ability to pay for private service.

Single individual	Annual income	\$900
Family of 2		1400
" " 3		1650
" " 4		1900
" " 5		2150

(Add \$250 for each additional dependent)

The total family income is to be considered where parents and children are working.

Dr. Charles H. Nammack has been appointed Director of the Fourth Medical Division of Bellevue Hospital, succeeding Dr. Alexander Lambert. Dr. Herman O. Mosenthal has been appointed visiting physician on the same division.

#### Ontario

*Payment for Welfare Work by the Case Method.*—For two years this County Society has endeavored to do the welfare work of the County within the budget allowed by the board of supervisors. The first year that budget was only \$3000. An agreement was reached with the public health committee of the board of supervisors that physicians should do all of the welfare work that was requested by the various welfare commissioners and record at the end of each month the work they did. Records were kept and at the end of the year the \$3000 was divided among the physicians pro rata according to the work done. It resulted in the physicians being paid for their work at the rate of 16 cents on the dollar. The next year, with great difficulty, the physicians persuaded the board of supervisors to increase its appropriation, but the increase was only \$2000 and that was hardly sufficient to take up the increase in demands that resulted. Naturally, the physicians have been dissatisfied with the plan and at their annual meeting the other day they voted to discontinue that arrangement and ask the welfare commissioner to compensate them for their services by the case method, which is proving much more satisfactory in other countries.

#### Seneca

*Request for a Milk Commission.*—The secretary of the Seneca County Society and the president of the Seneca Falls Hospital have asked the County Society to appoint a milk commission to investigate the quality of milk supplied to Seneca Falls. Complaints have been received that impure milk is being distributed in some instances in the village. A resolution adopted by the hospital staff calls

upon Governor Lehman to include in the 1934 budget a sum sufficient to cover the tuberculin testing of all herds now untested and to provide for the annual retesting of accredited herds. The resolution in part reads: "At the present time there is no regular way open for producers to sell their products as certified milk and the County Medical Society offers the only way for a producer to become qualified for the production of certified milk in the State by appointing a county milk commission."

#### Queens

*Minimum Tuberculosis Library for Physicians*—The Bulletin for December, 1933, indicates approval by the Society of the selection by the Queensboro Tuberculosis and Health Association of a Minimum List of books on Tuberculosis that a physician should have. The list follows:

*Intestinal Tuberculosis*, by Lawrason Brown, M.D. and Homer L. Sampson.  
*Pulmonary Tuberculosis*, by Morris Fishberg, M.D.  
*The Natural Process in Healing Pulmonary Tuberculosis*, by Marc Jacquerod, M.D.  
*Light Therapy*, by Frank H. Krusen, M.D.  
*Procedure in the Examination of the Lungs*, by Arthur F. Kraetzer, M.D.  
*Modern Aspects of the Diagnosis, Classification and Treatment of Tuberculosis*, by J. A. Myers, M.D.  
*Tuberculosis Among Children*, by J. A. Myers, M.D.  
*The Childhood Type of Tuberculosis*, by E. L. Opie, M.D., J. D. Aronson, M.D., F. M. McPhedran, M.D., and H. D. Chadwick, M.D.  
*Surgery of the Chest*, by George F. Straub, M.D.  
*Laboratory Diagnosis and Experimental Methods in Tuberculosis*, by Henry S. Willis, M.D.

#### Correspondence

(Continued from page 111)

however, the answer was not sufficiently clear to quote him.

Will you please, in the columns of your JOURNAL, explain in detail how a physician may avoid such evident gross imposition?

M. D., ALBANY.

#### Thanks for the Correction

To the Editors:

In your salutatory you call for criticisms on the new JOURNAL. I will remind you that new officers for County Societies take their office the first of January.

You have published in your list of officers of County Societies, the name of the President of the Washington County Medical Society for last year. Our President for this year is Dr. Roy E. Borrowman. Secretary and Treasurer are correct.

I refer you to the heading of this letter for all of the officers of the Society.

S. J. BANKER, *Secretary*  
The Medical Society of the  
County of Washington

To the Editors:

Please allow me to congratulate you on the marked improvement in the appearance of the NEW YORK STATE JOURNAL OF MEDICINE. . . .

On page thirty of the new edition, the 1933 officers of the Schenectady County Medical Society are listed. If you have not already done so, will you change this to read: J. J. York, President; E. K. Cravener, Secretary, and F. Mulcare, Treasurer. These physicians are residents in Schenectady.

EDWARD K. CRAVENER, M.D., F.A.C.S.

Scatter the Seed—the Wider the Better

To the Editors:

Congratulations on your new JOURNAL

"dress." I have been enjoying a pleasant evening leafing your issue of January first . . . I am interested in the article on pages 23, 24, 25 "Unified Action," "Food and Drugs Act," "Medical Sensationalism in the Press," and especially in the article "Doctors Say." . . . I should like to know whether reprints are available and what the cost of them will be . . .

MRS. JAMES BLAKE,

*President Woman's Auxiliary to the American Medical Association, Hopkins, Minnesota*

#### Typographical Criticisms

To the Editors:

The JOURNAL in its new shape and color looks handsome and is very handy. The paper is good, but the print is abominably poor.

You ask for advice and suggestion: give us larger print. The young will hail it and the old will bless you.

ROBERT ABRAHAMS.

To the Editors:

It affords me considerable pleasure to acknowledge the receipt this morning of the first copy of the new JOURNAL. Your committee deserves well-earned credit for appearance, subject matter, arrangement, and quality of advertising contained in the JOURNAL.

The type and printing is no small part of its general excellence. Like some books, a Journal can be made to "look interesting" and actually invite the reader to scan articles that otherwise would have been left unread.

Kindly accept the sincere congratulations of one member.

EDWARD F. MEISTER, M.D.



## THE FEDERAL INCOME TAX LAWS ANALYZED FOR MEDICAL PRACTITIONERS

By LEO T. ABBE, LL B  
*Certified Public Accountant*

It is the purpose of this article to present to the medical profession in a simple and nontechnical manner a method of assembling the financial data and then properly transferring these data to the Federal and State income tax returns.

In order that the reader may determine for himself his own status as a taxpayer, let us see who is required to make a return.

(1) Every individual having a net income for the taxable year of \$1000 00 or over, if single, or if married and not living with husband or wife,

(2) Every individual having a net income for the taxable year of \$2500 00 or over if married and living with husband and wife and

(3) Every individual having a gross income for the taxable year of \$5000 00 or over, regardless of the amount of his net income.

Briefly, if the total amount of the fees and other income is \$5000 00 or over, a return must be filed, *even if after deducting expenses the net income is less than the exemption*.

If the total amount of the fees, plus other income, does not reach the amount of \$5000 00, but after deducting expenses, the net amount is in excess of the exemption, in this case also, a return must be filed.

**EXEMPTIONS**—The personal exemptions are as follows:

To a person who is single \$1000 00

To a married person living with husband or wife or to the head of a family \$2500 00

A husband and wife living together receive one exemption.

If they make separate returns, the exemption may be taken by either, or divided between them.

**Credit for Dependents**—There is a credit for dependents of \$400 00 for each person under 18 years of age, or incapable of self support because mentally or physically defective.

**Where and When Must the Return be Filed**—The returns of individuals must be made to the collector of the district in which is located the legal residence or principal place of business of the person making the return. It must be filed on or before the 15th day of March, if the calendar year is the basis of the return. A return based on the fiscal year is to be filed on the 15th day of the 3rd month following the close of the fiscal year.

The return may be reported on either the cash or accrual basis. In most instances the doctor reports on a cash basis, that is, the actual cash received and disbursed during the year, and it is this form of reporting which will be discussed in detail.

The most important feature in the preparation of the return is the analysis of the receipts and deposits as well as the disbursements to distinguish between those items which represent gross income in its accounting and tax interpretation and items which may be a return on capital invested, or a receipt of moneys which represent neither fees nor profits on business deals. Obviously no attempt can be made to distinguish by name the kinds of income in contradistinction to receipts. The test that might be applied in its practical application would be the following question asked in connection with each form of receipts: "Does the amount received represent income or profit in its ordinary sense, or does it represent an exchange of cash for property of similar value relinquished for this cash?"

The difficulty or ease in assembling the receipts data and analyzing their source will depend a great deal upon the detail kept by the doctor. For the purpose of preparing the tax return, the receipts and income should be classified as follows: (1) Income from profession, (2) Interest on bank deposits, notes, bonds, etc. (3) Profit from sale of real estate, stocks, bonds, etc. (4) Dividends on stock (5) Other income.

There are other receipts besides income which go to swell the bank deposits. Where a proper accounting system is maintained by the doctor, these items will be definitely accounted for. Where, however, the doctor does not earmark carefully each item of receipts, the question of these deposits will return to plague him when the tax departments make inquiry. This practical suggestion is, therefore offered at this time. Prepare a statement of all outside funds, such as exchanges of checks with others, exchanges between banks, deposits in banks which are not income, etc. It is assumed that separate records are maintained to indicate the sources of income. By preparing this record, the income report and the amount of deposits may be reconciled to the satisfaction of the tax agents.

The following items are not to be included in the gross income of the taxpayer:

(1) Life insurance paid upon death of insured. (2) Amount received from endowment policies, except in certain cases. (3) Gifts, bequests, and devises (but the income derived from this property is taxable). (4) Tax-free interest.

The doctor who maintains a proper set of bookkeeping records presumably segregates those items of expense which are (1) wholly professional, (2) partly personal, (3) wholly personal. The doctor who relies upon his check book and supplementary records to establish his expenses for the year must analyze his disbursements with this division in mind.

The classification of expenses would depend a good deal upon the nature of the practice. There are certain expenses, however, which are generally applicable to almost every practitioner, and it is these expenses which will be discussed in detail.

The disbursements may be classified as follows

(1) Rent; (2) heat and light; (3) telephone; (4) laundry; (5) drugs and medicines; (6) minor instruments; (7) assistants and nurses; (8) office payroll; (9) magazines; (10) stationery and postage; (11) dues and subscriptions; (12) call service; (13) repairs of equipment; (14) auto expense; (15) insurance; and (16) depreciation.

Some of these expenses are partly personal, and there is presented in the following discussion, the proper tax application of each of the expense accounts.

**Rent.**—The payment for rent may be partly personal. The use of the leased premises will govern. Where the practitioner pays rent for office space exclusively, it may be deducted as an expense without further question. Where the doctor rents an apartment, uses part of it as an office and reception room, and the rest as a residence for his family, only part of this rental is a deductible professional expense. That part which is equitably (this does not mean proportionately) chargeable to the office expense should be deducted as rent.

**Heat and Light.**—A similar equitable division should be made of the heat and light bills for the apartment. Where domestics are employed, if any part of their time is devoted to the service of the office, that part so applied should be charged as a professional expense. It might be noted in this connection, that where the domestic sleeps in, that is, boards and lodges in the apartment of the employer, a similar portion of the maintenance is also deductible.

Where the practitioner owns his own home and uses part of it as an office and reception room, other expenses in lieu of rent would in their division be placed in the same classifica-

tion as rent. Insurance, repairs, and depreciation on the building would be subject to a proportionate division between personal and professional expense. The practitioner who owns his own home receives an advantage which is comparable to the deduction of rent in his authority to deduct as an expense, all interest on mortgage or mortgages, and all local taxes which are not assessments.

**Telephone.**—Expenses of telephone may be deductible in part or in full dependent upon its use. If the telephone is made available and used by the family for private purposes, only its proper proportion would be deductible as an expense.

**Laundry.**—If the laundry for the office is kept separate from the home laundry, the bills would be entirely deductible. Otherwise only its fair proportion may be deducted as an expense.

To summarize, where the office and residence are maintained in the same building, only these expenses are subject to division and partially deductible; rent, heat and light, telephone, laundry.

**Drugs and Medicines; Minor Instruments, Etc.**—The payments for drugs and medicines and minor instruments are deductible in full. Those instruments or parts which have a life of one year or less had best be charged up as minor instruments. Those which have a longer life should be added to the "Instruments Account," the depreciation of which will be taken up later.

**Traveling Expense, Autos, Etc.**—In the case of traveling expenses, auto expense, etc., undertaken for business purposes, there may be taken as an expense railroad or bus fares, meals and lodging as well. Incidentally, all traveling expenses, including railroad fare and hotel bills attending a medical convention may be deducted as a business expense.

The practitioner who maintains an automobile for professional purposes may deduct the cost of gas, oil, supplies, garage, repairs, insurance, and any other expenses resulting from its operation. He may also include a charge for depreciation on the car. Where the auto is also used by the family for other than professional purposes, the same degree of care must be exercised in apportioning the expense for tax purposes.

**Dues or memberships** to professional societies as well as trade publications are deductible. In the case of expense for magazines placed in the waiting room for the patients, where the purchase is made expressly for this purpose, it is also deductible.

**Payments for equipment** should be spread over the probable life, and a proportionate charge, otherwise known as depreciation set up

for each year or period. Where the equipment, in spite of its condition, becomes obsolete for all practical purposes, the balance not previously charged off is considered as an expense for the year in which it becomes obsolete.

The same principles of depreciation would govern the payments for *office furniture and books*.

In passing, it is recommended that a memo book be maintained in which would be indicated the date of purchase, name of equipment, and price paid therefore, so that inquiry on the part of the tax agent to substantiate the amount of depreciation would find the doctor prepared to justify it.

The test of the deductibility of any expenditure not properly identified with the above grouping would be its relation to income producing to the profession as well as absence of personal or living expense.

As a practical guide to the analysis outlined above, it is suggested that a columnar sheet be headed up for each group to a column. Items paid once a month such as rent, heat and light, etc., might all be grouped in the first two columns. The last column would be headed "personal expense." Then transfer from the check stubs to the proper column. This will provide an accounting of the expenses paid for by check. Further inquiry and reference to petty cash data will supply the information of the expenses paid for by cash.

#### PAYMENT OF TAX: (a) *Time of Payment.*

—The tax must be paid by the 15th day of March following the close of the calendar year, or if the return is made on the basis of the fiscal year, then it is due on the 15th day of the third month following the close of the fiscal year.

(b) *Instalment Payments.*—The taxpayer may, if he chooses, pay the tax in four equal instalments, as follows:

March 15th	25 per cent of the tax
June 15th	25 per cent of the tax
September 15th	25 per cent of the tax
December 15th	25 per cent of the tax

If, however, he is reporting on a fiscal year, he pays as follows:

- 25 per cent of the tax when the report is due.
- 25 per cent of the tax on the 15th day of the third month following.
- 25 per cent of the tax on the 15th day of the sixth month following.
- 25 per cent of the tax on the 15th day of the ninth month following.

Where the taxpayer elects to pay the tax in four equal instalments, he should make note in his daily office diary. The Collector of Internal Revenue does, however, send a slip as

a "reminder" in the form of a bill which should be enclosed with the check in payment and returned to the same office where the return was filed.

**GENERAL PROBLEMS.**—The following observations probably cover most of the inquiries with respect to the filing and Federal taxability of the income, professionally and otherwise.

(1) The taxpayer and his wife may elect to file either a joint return or individual returns. This election may be made each year. The amount of exemption may be divided by them as they see fit.

(2) The expense of a postgraduate course is a *personal* one and *not* permitted as a deduction.

(3) The profit on the sale of State or Municipal bonds is taxable. The interest received on State or Municipal bonds need *not* be included as income.

(4) Commuters' fares to the office are a personal expense and not deductible.

(5) In the case of a doctor who rents a property for residential purposes but incidentally receives patients in connection with his practice (his office being elsewhere), no part of the rent is deductible.

(6) The doctor cannot deduct as contributions the value of services given gratis to patients.

(7) Interest or service charges for the discounting of patients' notes are deductible as an expense.

(8) Losses on securities: (a) Securities held more than two years: losses may be deducted in full. The reduction in tax, however, because of this loss is limited to 12.5 per cent of the loss sustained.

(b) Securities which have become wholly worthless are deductible in the year in which they become worthless. The cost is deductible as a loss.

(c) Securities held less than two years: The losses on these securities may be offset against a similar amount of profits on securities held less than two years. The *excess of profits is taxable*. The *excess of loss is not deductible*.

If these securities are bonds of governments or subdivisions of governments, domestic or foreign, the losses may be deducted in full.

The State of New York Income Tax Law does not distinguish between securities held for more than two years and those held for a lesser time. The above rules would not apply in determining the profit or loss of securities for State Income Tax purposes.

# MEDICOLEGAL

By LORENZ J. BROSNAN, ESQ.  
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## Legal Practice of Medicine—Diagnoses Held Violation of Statute

ORGANIZED medicine has for years been forced to combat with attempts on the part of laymen to engage in the practice of medicine under one guise or another. A decision handed down recently by the highest court of one of the Mid-western States, dealt a severe blow to lay organizations undertaking to render diagnostic medical work.

A certain layman, G—, had conducted what was called a "health audit." The procedure followed was that for a fee of \$10 a year he undertook to furnish to his so-called "subscribers" four urinalyses and a blood pressure test. The patients would send him samples of urine, usually by mail, and they would be turned over to a certain duly licensed pathologist, Dr. A—, who was under contract to G—. Analysis would be made and the findings given back to G—. If serious abnormalities were found, G— would advise the subscriber to consult a competent physician for treatment, but if the abnormalities were slight, he would give out advice as to proper diet, habits and exercise. The report of the health audit, concededly, never advised the taking of any other form of treatment, and never advised as to drugs or medicines.

The State Board of Medical Examiners investigated the practices of G—, and advised Dr. A— that G— was engaged in illegal medical practice, and directed that Dr. A—, the pathologist, desist from making urinalyses in accordance with his contract with G— on the ground that it was illegal for him to do so. Suit thereupon was brought by G— against the State Board to enjoin them from interfering with the operation of the contract which he had made with the pathologist. His complaint was dismissed by the District Court, and the matter was taken up on appeal.

The high Court concluded that the record showed a case of illegal medical practice, and affirmed the ruling of the lower Court, thereby approving the action taken by the Board of Medical Examiners. In its opinion the Court said:

"In our opinion, advising the subscriber for a fee as to certain improved habits of diet, exercise or living, although not accompanied by any medical prescription or treatment is a violation of section 5717 (which prescribes the penalty for practicing without registration). Diet, exercise and mode of living are agencies for the relief of disease. Indeed, they are the only known relief or treatment of some diseases. It further appears that the urinalyses and blood pressure tests are important as indicating the condition of a patient's health, and when an abnormal condition is indicated, the opinion of the pathologist is passed on by the plaintiff to his subscriber.

"In his complaint the plaintiff sets out some twenty-two items whose presence, absence or quantity must be considered in determining the result of the analysis. The analysis and the test form a basis for a diagnosis. Necessarily the question of whether the analysis results in indications showing normal or abnormal conditions is a matter of professional medical opinion. Deductions must be drawn from the result of the analyses, and these deductions are of value only when made by a medical man. It cannot be otherwise. The pathologist is, of course, a licensed physician, and in this case is said to be an expert in his line. Obviously, if he were in direct contact with the subscriber as a patient, he would be practicing medicine in doing exactly what the plaintiff hired him to do. The results of his work the plaintiff passes on to his subscribers.

"If Dr. A— was practicing medicine in what he did and in determining for the plaintiff whether the condition of the urine was normal or abnormal, then, in our opinion, the plaintiff was practicing medicine when he passed on to his subscribers the result of the analysis and the advice of the pathologist. It was as much practicing medicine for the plaintiff to engage Dr. A— to do this for him as it would have been if he had attempted himself to perform these analyses, as he in fact did in the case of the blood pressure tests. To pass on to his subscribers advice as to whether or not the tests indicated a normal or abnormal condition, and whether or not the subscriber should consult his physician or be content with the advice which plaintiff might give in regard to diet, exercise, or mode of living was practicing medicine."

The Court pointed out it had already held in a former case that a corporation or layman could not practice law indirectly by hiring regularly qualified lawyers to do the work for them. It continued in the opinion:

"We are just as firmly convinced that it is improper and contrary to the statute and public policy for a corporation or layman to practice medicine in the same way. The obligation of Dr. A— under his contract was to plaintiff not to the subscribers. Plaintiff might engage anyone to perform these analyses. What the law intends is that the patient shall be the patient of the licensed physician, not of a corporation or layman. The obligations and duties of the physician demand no less. There is no place for a middleman."

In support of the determination that diagnosis alone amounts to the practice of medicine, reference was made to a case decided some fifteen years before. In that case a chiropractor was convicted of practicing medicine without a license on proof that the offender had made a physical examination of a

patient, diagnosed an abdominal tumor, and for that condition had recommended an operation by some competent surgeon. In the earlier case the Court had said:

"The science of diagnosing human diseases and human ailments has come to be a distinct branch or department of the medical profession; the diagnostician limiting his efforts to a discovery of the disease or ailment from which a patient may be suffering; its character and location, leaving the treatment thereof to some other physician or surgeon. This is a matter of common knowledge. And it requires no discussion or argument to demonstrate that the physician who thus applies his learning and energies is performing a highly important duty of the profession and is engaged in the practice thereof though he prescribes no drug and administers no specific treatment."

The result arrived at by the Court is indeed gratifying. The decision is in harmony with reason and with sound public policy.

### Claimed Negligent Herniotomy

An elderly man consulted a surgeon regarding a hernia from which he was suffering. The patient gave a history that while he was taking chiropractic treatments several years before, he had felt something snap in his right side with terrific pain resulting and that ever since that time he had experienced a swelling in his right groin on coughing. He had worn a truss for three and one-half years and during the few months prior to consulting the doctor the hernia had caused him considerable annoyance, and that it was difficult on many occasions for him to reduce the hernia.

The doctor examined him and found the right inguinal ring enlarged with a mass protruding through the canal. He advised operation, to which the plaintiff consented. During the performance of the operation, after making the incision, the doctor found a large mass of indurated fatty tissue around the cord. He decided that this tissue if allowed to remain would make a recurrence of the hernia more probable and removed the tissue, which involved a long tedious and difficult procedure. The doctor attended the patient during his period of convalescence and during one stage of the aftercare made a small incision to determine whether any fluid had accumulated at the site of the operation or whether any infection had developed. No discharge was obtained upon making this incision. The patient reported to the doctor on one occasion that he had removed what he termed a piece of string that protruded from the incision. He exhibited same to the doctor who put it under a microscope

and determined that it was a bit of fascia rather than any foreign substance. The patient went under the care of another doctor who some time later drained an abscess that developed at the site of the operation.

An action was brought against the surgeon, charging him with malpractice in making the claim that in the performance of a right inguinal herniotomy on the plaintiff the defendant left in the plaintiff's abdominal and pelvic cavities a gauze sponge and that as a result of said claimed negligence the plaintiff's condition did not improve properly and that he was obliged to undergo subsequent surgical treatment. Before the case came up for actual trial the plaintiff died from cancer of the stomach and the action against the doctor therefore abated.

### Alleged Negligent Operation of the Right Eye

An eye specialist was consulted by a woman about 42 years of age. She complained of pains in her eyes. The diagnosis was cataracts of each eye and an operation was suggested, to which the patient consented. About a week later the patient entered a hospital and under a local anesthesia the following operation was performed: The iris was incised and the necessary muscle removed.

About five weeks later the patient returned to the hospital and under local anesthesia the doctor went in under the cornea and extracted the lens. The incision was sutured and bandages applied to both eyes and the patient remained in the hospital ten days. The doctor saw her daily and the wound healed nicely. At the end of ten days she was permitted to go home. The doctor saw her daily at his office for about three weeks, toward the end of which time he discovered that a membrane had formed over the pupillary area. The patient was sent back to the hospital, the membrane was needed and this condition was corrected. Approximately one month after the operation the final examination revealed that the vision in the right eye with glasses was 20/30, and the old cataract was present on the left eye with vision 10/200. The doctor then told her to come back and that he would operate upon the left eye. She never returned.

Thereafter a bill was sent to the patient and a small payment on account was made. The doctor sued for the balance due and a counterclaim was interposed alleging malpractice.

The case duly came on for trial and at the start of said trial the defendant consented to a discontinuance of the counterclaim and a judgment was rendered in favor of the doctor.

### Death Due to Status Lymphaticus

A girl of 16 who was employed in a factory injured her foot when it was struck by the point of a pair of scissors that dropped upon it. She consulted a certain physician who on examination found that she had a punctured wound and laceration on the dorsum of the foot. The doctor applied a wet dressing of chloramine and a sterile gauze pad and then bandaged the foot. He also injected into the arm of the patient 15 units of tetanus antitoxin. The preparation which he so used had been obtained by him in ampule form from the local board of health. The injection was made with the usual antiseptic precautions. The patient left the doctor's office, and the next he heard of her was that within an hour or so after she left his office she had dropped dead on a nearby subway platform.

An autopsy was performed by the medical examiner who reported the death was caused by status lymphaticus.

An action was brought against the doctor by the administrator of the decedent, charging that negligence on the part of the doctor caused the death.

The case came on for trial before a judge and jury and after the issues had been submitted to the jury a verdict was rendered in favor of the defendant.

### Treatment of Injuries to Hand Sustained in an Accident

A young woman was brought to the accident ward of a hospital shortly after she had been injured in an automobile accident. The chief surgeon in attendance at said ward examined her and found that she had a compound fracture of the first, second and third metacarpal bones of the left hand, severe lacerations of said hand and cut tendons, with subcutaneous hemorrhage of the hand and forearm. An x-ray picture was taken, which confirmed the said diagnosis. The patient was put under general anesthesia and the fracture reduced. The doctor drew the tendons together and sutured them. Three incisions were made in the hand and forearm and blood clots were evacuated and drainage instituted. The patient was given an injection of 1500 units of tetanus antitoxin. The doctor put the hand in an anterior splint and bandaged it lightly. The patient remained in the hospital over night and he saw her on the following day. Her condition was good and the swelling had gone down somewhat. He did not disturb the splint and left the patient in charge of the house surgeon. That same afternoon the surgeon who had treated her received a call from a certain doctor connected with another hospital who said he wanted to take over the care of the patient. The surgeon consented and the patient was taken away from the hospital. The surgeon never saw her again.

The next he heard of the matter was when he was served with a summons and complaint instituting a malpractice action against him, charging that he was negligent in his treatment and that he had caused an infection to

develop and that the patient had sustained a permanent impairment of function of the left thumb and loss of power in the fourth and fifth left fingers.

An answer was interposed in the action on behalf of the doctor and some time later investigation revealed that the plaintiff before she brought her action against the doctor had instituted an action in the Supreme Court against the owner and operator of the automobile as a result of whose negligence she had sustained her original injury. The said action against the automobile owner had come on for trial and a verdict had been rendered in favor of the plaintiff in that action in a substantial sum. An application was made to the court permitting the defendant in the malpractice action to set up as a defense in his answer the fact that the plaintiff had been compensated for her injuries in the automobile accident. Shortly after the said defense was interposed in the malpractice action the plaintiff's attorneys consented to discontinue the action.

### Particle of Steel in Eye

A man who had been working on an automobile appeared at the clinic of an eye and ear hospital and stated to the doctor in attendance that he thought he had gotten something in his eye.

The doctor examined his eyes carefully, using an electric bulb and was unable to discover anything. He put some dilating drops in the patient's eye and gave him a requisition for x-rays in the x-ray department of the hospital, explaining to the patient that he should immediately go to said department and return after the pictures were made. The doctor never saw the patient again. The patient several days later went to the hospital's x-ray department and obtained the pictures which revealed the presence of a tiny foreign particle 0.75 by 1 mm. in size, located 12 mm. back, 11 mm. nasal side, 3 mm. below center.

The case had been reported to the insurance carrier for the man's employer as an industrial accident covered by workmen's compensation. The insurance carrier referred the patient subsequently for x-ray examination to his own doctor who put him in a hospital and by the use of a magnet drew from his eye a particle of steel about the size of the head of a pin. The patient lost a considerable degree of the sight of the said eye.

The patient instituted action against the doctor who first examined him, charging him with negligence in failing to discover the foreign body.

After the action was started, however, the plaintiff failed to bring the same on for trial. After some time had elapsed a motion was made to dismiss the case for lack of prosecution which was granted by the court at special term, thereby terminating the matter.

# Books Reviewed

**THE CLINICAL ASPECT OF CHRONIC POISONING BY ALUMINUM AND ITS ALLOYS**—By Ico Spira, M.D. Octavo of 28 pages, illustrated. London: John Hale Sons & Danielsson Ltd., 1933. Paper 2/6.

This is a small pamphlet in which the author describes certain gastro-intestinal and cutaneous disturbances which he contends are the result of using aluminum utensils in the kitchen. The observations of the author are limited to cases occurring in Austria, Czechoslovakia and England.

In this country during the past few years there has been considerable agitation over the possibility of poisoning by aluminum compounds used in the manufacture of food. To those interested in this subject, this pamphlet may be of value. A fairly complete bibliography is appended to the article. S.

**PROSPECTING FOR HEAVEN**—Some Conversation About Science and the Good Life. By Edwin R. Embree. Octavo of 185 pages. New York, The Viking Press, Inc. Cloth \$1.75.

The strict scientist lives in a world of realities. When he speculates it is for the purpose of converting ideas into facts. One may, however, talk about science in an abstract way not to seek facts but to ask himself the question—"Wherefore?" He soon finds himself in a super natural world in the words of the author—"Prospecting for Heaven."

The dinner table seems to afford an ideal setting for such discussions. At that time we are apt to depart from realities and theorize. And so we may talk about the "dark of the mind" or of "curiosity" or of "the art and science of living together" or of "feeble and faltering minds." Eight individuals, only one or two being physicians (psychiatrists), participated in furnishing the author with the material for this book. To the practitioner trained in the school of grim realism such a book may not register a sympathetic response. It should find its appeal among students of psychology.

EMANUEL KRIMSKY

**HOW TO BUDGET HEALTH**—By Evans Clark. Octavo of 328 pages, illustrated. New York, Harper & Brothers, 1933. Cloth \$4.00. (Published for the Twentieth Century Fund.)

This volume of three hundred pages is a report on a three-year investigation of group practice conducted under the auspices of the Twentieth Century Fund. According to the preface it is intended to be "A sort of sequel to the report of the Committee on the Costs of Medical Care." It describes collective methods of supplying medical service to the people—groups of physicians dealing with groups of people, in distinction from individual doctors serving individual persons. Its first six chapters contain encyclopedic information regarding groups, guilds, and insurance societies which are in actual operation. Then come five chapters on the problems of organizing groups first of physicians and then of persons who are prospective patients.

Chapter 12 quotes the opinions of seventeen physicians regarding group medical service, and chapter 13 gives similar opinions of 1500 laymen who were interviewed.

The reader would do well to turn to Chapter 11 first, for it is a concise analysis of the contents of the previous chapters.

This book is predominantly informational, with a conspicuous absence of propagandism. It closes with a plea that those who wish to organize a group for giving collective medical service should join with physicians in making a thorough study of the problem in that particular community.

FRANK OVERTON

**SURGICAL ANATOMY**—By C. Latimer Callender, M.D. Quarto of 1,115 pages, illustrated. Philadelphia: W. B. Saunders Company, 1933. Cloth \$12.50.

This volume, consisting of 1,115 pages with 1,280 illustrations, is well bound and printed on excellent paper with a clear, large type. The work is an entirely new one. It differs from the usual textbook of anatomy in that the clinical manifestations of the subject under discussion are included. It has none of the characteristics of the usual uninteresting presentation of the subject of anatomy. It differs from the previous textbooks on surgical anatomy and on surface anatomy in that it is much more comprehensive and inclusive.

The general plan is to present the anatomy of the organ of the region under discussion, and then to discuss its surgical application. Dr. Dean Lewis has written the foreword, in which he states that the paths of surgical approach to the pathologic process are indicated.

Only anatomical facts which have some clinical importance are discussed. The reviewer knows of no similar book or books which, in any way, can be compared to this one. Because of the interesting method of presentation, and because of the completeness of the material included, the book is recommended most highly, not only to the surgeon, but to the medical student and the internist.

MERRILL N. FOOTE

**POLIOMYELITIS**—A survey made possible by a grant from the International Committee for the Study of Infantile Paralysis. Octavo of 562 pages, illustrated. Baltimore, Williams & Wilkins Company. Cloth, \$6.00.

This publication contains the results of a three-year study of poliomyelitis by the International Committee for the Study of Infantile Paralysis. The material is grouped under the following headings: Historical summary, Etiology, Resistance and Immunity, Symptomatology, Epidemiology, Pathology and Treatment, each chapter being written by a special contributor. The publication presents all the information on the subject available at the time.

The volume will serve as a valuable reference book for many years and should be in the possession of everyone interested in this subject.

MURRAY B. GORDON.

TEXTBOOK OF PHYSICAL THERAPY.—By Heinrich F. Wolf, M.D. Octavo of 409 pages, illustrated. New York, D. Appleton-Century Company, [c. 1933.] Cloth, \$5.50.

The book consists of twenty-eight (28) chapters, in the first nine of which the author gives the theory and principles of Physical Therapy. The chapters on Massage and Hydrotherapy stand out pre-eminently.

From chapters ten (10) to twenty-eight (28) the author brings us through the varied systems of the human anatomy and other varied miscellaneous subjects and shows wherein Physical Therapy is of value and its mode of use. Among these chapters the one on Fractures predominantly stands out and in our estimation should be of inestimable value to the Orthopedist and to the Surgeon (practicing fracture work).

The remaining five chapters consist of two by William Bierman, M.D. Hyperthermia is the subject of one upon which he is an authority. He writes well, is readily understood, but his subject is a highly debatable one and needs considerable more work and time before being placed on a definite basis. His subject in the other chapter, Minor Electro-Surgery, is good, to the point, well written and worth reading.

The chapter by Adolph L. Lillien, M. D., covers ten pages for the Diseases of the Lower Respiratory Tract. Indeed short for a large subject.

The chapter by Farel Jouard, M.D., Physical Therapy in Otolaryngology, seems to cover the field well in the allotted space. His preference for the use of surgical removal of tonsils is absolutely evidenced by his inadequate explanation of his method of removal by electrocoagulation.

Madge L. McGuinness, M. D., writes an interesting final chapter on Physical Therapy in Gynecology. Her chapter is very limited but contains many good points.

The book shows the widespread possibilities for using the modalities of Physical Therapy in the treatment of disease. It definitely points out that this science is necessary and its measures should be used with other therapeutic means, in general practice and in the specialties.

JOHN J. HAUFF.

THE TREATMENT OF RHEUMATISM IN GENERAL PRACTICE.—By W. S. C. Copeman. Octavo of 215 pages. Baltimore, William Wood & Company, 1933. Cloth, \$3.25.

The writer discusses acute rheumatic fever and its treatment. Then under separate chapters he discusses acute myositis and fibrositis, sciatica, neuritis, the various arthritides and spondylitis. The term rheumatism in the title will probably lead to confusion in the minds of many. In the treatment of the latter group of conditions, thorough discussion is given to the various drugs such as thyroid, iron and arsenic. The importance of a proper state of nutrition and well balanced diet—sufficient calories for the mal-nourished, and the reduction of weight for the obese is stressed. Vaccines and non-specific protein therapy are dis-

cussed, but no great results are predicted. Physical methods, such as exercise and manipulations, are gone into in great detail. While there is nothing new, there is considerable detail in treatment. This little volume makes very easy reading.

M. A. RABINOWITZ.

PSYCHOANALYSIS AND MEDICINE.—A study of the Wish to Fall Ill. By Karin Stephen, M.A. Octavo of 238 pages. New York, The Macmillan Company, 1933. Cloth, \$2.50.

The book is based on a series of eight lectures delivered mainly before medical students at Cambridge. The titles of the eight chapters indicate the subject matter under discussion. In the first chapter, there is an explanation of the origin of the unconscious in disappointment and an elucidation of the nature of conflict and repression. In the next chapter the obstacles in the way of investigating the unconscious, and the use of psychoanalytic free association technique are presented. The primitive sexual nature of the unconscious is given in chapter four. Another chapter is devoted to the infantile pleasure seeking by the mouth. A chapter is devoted to the excretory pleasure seeking and its relation to creation. The phallic pleasure seeking, the Oedipus complex, and castration fears are treated in one chapter. Anxiety and guilt are treated together. Primitive mental mechanisms, defense mechanisms, and the use of transference in treatment are discussed in the final chapter.

The book is a fine presentation of the psychoanalytic theory and technique, well written and quite thorough.

IRVING J. SANDS.

ALLEN'S COMMERCIAL ORGANIC ANALYSIS.—Edited by C. Ainsworth Mitchell, D.Sc. Volume X, Fifth Edition. Octavo of 817 pages, illustrated. Philadelphia, P. Blakiston's Son & Company, [c. 1933.]

The entire set of ten volumes is a treatise on the properties and modes of analysis of the various organic chemicals and products employed in the arts, industries, commerce, science and medicine. Volume ten is a comprehensive source book dealing with hemoglobin and its derivatives, albuminoids, structural proteins, vitamins, hormones and pectins.

The contributors are all British authorities. It is an excellent reference book, well written and up to date. The clinician will find of particular value the chapters on vitamins and hormones. Professor Drummond, who has contributed the chapter on vitamins, describes the chemical nature of the vitamins, biological tests for their detection, care of the test animals, method of their quantitative estimation, symptoms of vitamin deficiency, vitamin standardization and therapy.

The chapter on hormones is written by Culhane and Underhill and contains excellent surveys of thyroxine, parathormone, adrenaline, insulin, pituitary hormones and gonadotropic



hormones, with complete descriptions of their constitution, preparation, extraction, properties, derivatives, physiology, pharmacology and methods of assay. These chapters are infiltrated with extensive bibliographic references.

WILLIAM S. COLLENS.

**THE ENLARGED PROSTATE AND PROSTATIC OBSTRUCTION**—By Kenneth M. Walker, I.R.C.S. Second Edition. Octavo of 223 pages, illustrated. New York, Oxford University Press, 1933.

The new edition of this little book covers the whole subject of the surgery of bladder neck obstruction, including the more recent transurethral procedures in a very concise form.

While of course it would be impossible to cover such a large subject exhaustively in such a small volume, there is a great deal of information condensed in a small space. The writer is a well known clinician with a very large experience and his book clearly reflects his intimate familiarity with all the problems involved. It is heartily recommended to the general practitioner who desires to cover briefly an up-to-date review of the problems of prostatism.

It is easy reading and I think that the specialist would thoroughly enjoy an evening spent in reading it.

N. P. RATIBURN.

**ESSENTIALS OF PRESCRIPTION WRITING**—By Cary Eggleston, M.D. Fifth Edition. 16mo of 155 pages. Philadelphia, W. B. Saunders Company, 1933. Cloth, \$1.50.

This is an excellent, well-written, instructive volume upon a subject which receives but little attention in the curriculum of the medical college. The importance of proper prescription writing is emphasized and numerous examples are presented.

The fact that the demand for this book has compelled frequent editions of the work attests its value. It should be studied by all who prescribe drugs.

HENRY M. MOSES.

**SURGERY OF THE STOMACH AND DUODENUM**—By J. Shelton Horsley, M.D. Octavo of 260 pages, illustrated. St. Louis, C. V. Mosby Company, 1933. Cloth, \$7.50.

To speak in the old-fashioned review manner one would say: This book covers adequately the surgery of the stomach and duodenum. It is written by a master surgeon with knowledge of the recent physiologic work on the gastro-intestinal tract. It represents personal experience. It not only describes common but unusual clinical symptoms and correlates the symptoms and operative technique with the physiologic facts. Extensive operations are described in detail. Professor Harvey E. Jordan of the University of Virginia gave the author assistance in the preparation of the chapter on Embryology, Anatomy and Physiology.

But, in the modern review one wishes to give more than the old-fashioned technical views. Here is a book that from the dedication to the final word is interesting and instructive. It breathes the personality of the author, a man whose life has been dedicated

to the study of surgery as an art. To those who know the author and him to whom the work is dedicated there is recalled the cheering hospitality of these wonderful Southern Gentlemen who combine in themselves all those graces of background, art and science which go to make up the perfect master surgeon.

Here is a book you can read from cover to cover and will not care to lay down until you have finished it. The young men can gain lessons in experience from it, the older surgeon can refresh and broaden his mind by comparisons which naturally occur as the pages are turned. It is recommended to all. It will make a great gift for the Chief to give his assistants.

RUSSELL S. FOWLER.

**PEDIATRICS**—By Henry Dwight Chapin, M.D. and Lawrence T. Rowser, M.D. Seventh Edition. Octavo of 775 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$7.00.

This one volume "Pediatrics" is a very satisfying book. The whole subject is covered briefly, clearly and yet completely as may be seen by perusing the table of contents. We miss only the unimportant controversial points and the distracting repetition of case report statistics of which most books are too full. The important controversial matters are given with editorial comment. All unnecessary subjects have been omitted with the exception of Addison's Disease. And why this is included in a book of Pediatrics we are still at a loss to understand.

The arrangement of subjects is excellent. There is a complete index and in general the book will serve well the medical student as a text book and the general practitioner as a book of ready reference. We have thoroughly enjoyed reading the book from cover to cover in preparation for this review.

Dr. Chapin's Speedwell Plan for the care of dependent convalescent children is especially praiseworthy, deserving wide publicity for the purpose of stimulating more frequent imitation.

K. G. JENNINGS.

#### Cancer

**What Everyone Should Know About It.** By James A. Tobey, Dr. P. H. Octavo of 313 pages, illustrated. New York, Alfred A. Knopf, 1932. Cloth, \$3.00.

This book is remarkable for more than one thing. In the first place it has two introductions; one by H. L. Mencken and one by J. C. Bloodgood. One of these is sincere—it begins "In a few years, I hope and suspect Doctor Tobey's book will have to be rewritten." Some of it could be rewritten now. It carries embedded in its matrix that belief in propaganda, in ballyhoo, that was a part of the first phase of the attack on cancer. The public should be told about cancer as much as their tender nerves could bear, and to the end of such education the various techniques of the salesman should be mobilized and set to work.

Unfortunately the layman having become interested in cancer has begun to investigate for himself and in scrutinizing the statistics offered him just as you and I investigate the claims of the latest cancer cure.

Doctor Bloodgood, for instance, says on page XXVII, "in one of the largest clinics of this country in 1915, the actual cures (sic) of cancer of the stomach by resection were less than two per cent, today the actual five year cures (sic) are reaching twenty-five per cent in a large number of clinics." Phooey! The Public knows better than that, you and I know better than that and Joe Bloodgood knows better than that and should have intelligence enough to know that false representation is bad salesmanship. It is the truth that fully half of the cases of cancer are incurable when, in the present state of our knowledge and skill, they are—not recognized, but recognizable. That what is now most needed is not knowledge on the part of the patient but knowledge that nobody has. That more intense and distributed research seems the only hope and that false optimism, in this as in so many other fields, will be followed by loss of confidence and despair. It is true that cancer is now recognized too late. Some of this is the fault of the patients' ignorance and neglect. Some of it is due to the neglect and ignorance of the physician. Both should be instructed. It is also true that the cancer victim at present must often run the gauntlet of cruel, expensive and futile therapy before his inevitable release.

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JOHN E. JENNINGS.

**CASE STUDIES IN THE PSYCHOPATHOLOGY OF CRIME.**—By Ben Karpman, M.D. Vol. 1. Large octavo of 1042 pages, illustrated. Washington, Mimeoform Press, [c. 1933.] Cloth, \$12.00. (The sale of this book is restricted to members of the medical, legal, scientific and other professions having a direct and definite interest in medical and social problems.)

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The method indicates the scientific approach in understanding anti-social behavior.  
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WILLIAM E. MCCOLLUM.



## THE DIAGNOSIS AND MANAGEMENT OF CARCINOMA OF THE COLON AND RECTUM

By FRANK H. LAHEY, M.D.  
Boston, Massachusetts

Read at the Annual Meeting of the Medical Society  
of the State of New York at New York City, April 4, 1933

CANCER of the colon and rectum is a far from hopeless lesion. On the contrary, there are several features about malignancy in these locations which should encourage us to continue trying to cure an ever-increasing percentage of these cases.

As is shown in Table I, out of 270 carcinomas of the colon and rectum, 202, or 75 per cent, occurred somewhere between the sigmoid and the rectum. Carcinoma of the sigmoid and rectum is notably benign in character. Many of the lesions undoubtedly begin as benign adenomata and then become malignant adenomata with a relatively low degree of malignancy. Fortunately, the sigmoid and rectum, being an intestinal level intended for the storage of feces, are equipped with a relatively scanty number of lymphatics. Since, also, it is the function of this segment of the large intestine to act as a storage reservoir,

TABLE I—SITE OF CARCINOMA OF LARGE INTESTINE IN  
270 PATIENTS

Cecum and ascending colon	36	13 per cent
Hepatic flexure	12	
Transverse colon	18	
Splenic flexure	5	
Sigmoid and descending colon	58	22 per cent
Rectosigmoid	37	
Rectum	107	53 per cent
Sigmoid to rectum	202	75 per cent

relatively little fluid absorption goes on at this level. It is readily possible, by means of digital, proctoscopic, and sigmoidoscopic examination, as well as by bismuth enemata and laboratory examination of the stools, to make quite positive and early diagnoses of lesions in this region. In addition to that, it is anatomically possible to radically remove all parts of the colon, including the rectum and lower sigmoid together with their adjacent lymph glands. All of these factors should encourage us to try and obtain better results in carcinoma of the colon and rectum than we have assumed were possible.

From the point of view of symptoms and from the point of view of technical difficulties in operative procedures, the large intestine

may be divided into three segments: (1) the proximal colon, extending from the cecum up to, and past, the transverse colon; (2) the distal colon, extending from the splenic flexure and transverse colon down to the rectosigmoid junction; and (3) the rectum.

The function of the proximal colon plays a considerable part in the character of symptoms produced in the presence of malignant lesions at this level. The proximal colon is rich in lymphatics. It is a level at which fluid absorption goes on to a marked extent. Because the character of its contents is fluid, they tend to be rich in organisms of a high virulence, probably due to the fluid character of the media producing favorable cultural conditions. Because, also, of the fluid character of the contents of the right colon, intestinal obstruction tends not to occur here. Also, because of the fluid character of the intestinal contents here and the presence of organisms of high virulence, operative procedures on the proximal colon are extremely dangerous from the point of view of contamination, spreading of infection, and the production of general peritonitis.

The distal colon, on the other hand, extending from the splenic flexure to the rectosigmoid junction, possesses relatively little fluid-absorbing function. It contains feces of solid character, and so tends not to harbor numerous organisms of a high virulence; it is less rich in lymphatics because of its storage function as compared with the right colon; and because malignant lesions at this level tend to be annular in type, together with the fact that its contents are solid, the symptoms of intestinal obstruction occur much earlier and are of more marked character than in malignant lesions of the right colon.

Lesions of the rectum, occurring in the bowel from the rectosigmoid junction to the anus, due to the fact that this intestinal segment is almost without function except that of storage, may and, in fact, are frequently of quite silent character. Not infrequently,

Unfortunately the layman having become interested in cancer has begun to investigate for himself and in scrutinizing the statistics offered him just as you and I investigate the claims of the latest cancer cure.

Doctor Bloodgood, for instance, says on page XXVII, "in one of the largest clinics of this country in 1915, the actual cures (sic) of cancer of the stomach by resection were less than two per cent, today the actual five year cures (sic) are reaching twenty-five per cent in a large number of clinics." Phooey! The Public knows better than that, you and I know better than that and Joe Bloodgood knows better than that and should have intelligence enough to know that false representation is bad salesmanship. It is the truth that fully half of the cases of cancer are incurable when, in the present state of our knowledge and skill, they are—not recognized, but recognizable. That what is now most needed is not knowledge on the part of the patient but knowledge that nobody has. That more intense and distributed research seems the only hope and that false optimism, in this as in so many other fields, will be followed by loss of confidence and despair. It is true that cancer is now recognized too late. Some of this is the fault of the patients' ignorance and neglect. Some of it is due to the neglect and ignorance of the physician. Both should be instructed. It is also true that the cancer victim at present must often run the gauntlet of cruel, expensive and futile therapy before his inevitable release.

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at this level, together with low abdominal or rectal pain. Anemia and cachexia are late symptoms. A mass was palpable by rectal examination or through the abdominal wall in over 80 per cent of the cases, and proctoscopy usually showed the lesion. A majority of the lesions occurred in males (62 per cent). Roentgenographic examinations show filling defects with complete or incomplete obstruction. Lesions in the sigmoid, however, are easily overlooked by roentgenographic examinations, due to the fact that the bismuth-filled segments of the redundant sigmoid frequently fall down over the rectosigmoid junction.



Fig. 1.—Bismuth X-ray of a Carcinoma of the Transverse Colon. Note the typical hooking described by roentgenologists due to the sharp demarcation between the neoplastic and normal bowel wall and some degree of invagination at this point.

tion and so obscure the lesion. This is an important point to bear in mind and all experienced roentgenologists realize the necessity of manipulating the patient in various positions to visualize possible lesions at this level.

It is interesting to note that in a series of 100 consecutive carcinomata of the colon and rectum investigated by us to ascertain the frequency with which the textbook feature—alternating diarrhea and constipation—occurred, it was found present in but 8 per cent of the cases. I would like to stress the fact that this symptom, so often mentioned in

textbooks in connection with carcinoma of the colon, is a late symptom. It tends not to occur until some considerable degree of obstruction is present, and diagnoses should be made at an earlier stage before this has occurred.

The early diagnosis of carcinoma of the colon and rectum will not be made in an increasing number of cases until particularly middle-aged and elderly patients are educated to seek advice for any change in bowel function and until they are educated to readily submit to x-ray examination with bismuth enemata and to proctoscopic examinations. To make this possible, the costs of x-ray examinations by bismuth enemata must be brought down to such levels that they can be employed unhesitatingly upon doubtful cases. In addition to that, patients must be told and taught that there will be a great many negative findings. The price of early discovery of carcinoma of the colon is examination on suspicion and of necessity, because of the intangibility of early symptoms here, the suspicion will often prove groundless.

The need of adequate rectal examinations in suspected cases of carcinoma of the rectum is always stressed by those interested in this disease. That it needs repetition is evidenced by the fact that patients still come to us in advanced stages of the disease, never having had a rectal examination, although they have been under a physician's care for some time.

The casual rectal examination for a possible carcinoma, particularly of the rectosigmoid junction, will result in failure to discover it in many of these cases. When one attempts rectal examination for possible carcinoma of the rectum or low sigmoid, all possibilities of discovering the lesion digitally should be exhausted. The patients should be examined with one finger in the rectum and the other through the abdomen, bimanually. They should be examined in the squatting position, asking them to strain so that the sigmoid descends upon the examining finger, thus making it possible to discover high lesions which would otherwise be overlooked, and they should be examined in the knee-chest position on the examining table. When there is the slightest doubt, rectal examinations should be followed by sigmoidoscopic examination. Sigmoidoscopy is not a difficult thing to do; one readily acquires the technic, and many lesions that cannot be palpated can be diagnosed by this means.

In discussing carcinoma of the colon and rectum, one should have in mind that polyp or polypoid masses in the colon are often forerunners of carcinoma. They are definit-

precancerous lesions and should be dealt with with this in mind.

The incidence of polypi in the colon, as reported by J. H. Satint\* is as follows: In 42 cases, 8 were in the cecum, 6 in the ascending colon, 3 in the transverse colon, 5 in the descending colon, and 20 in the sigmoid.

So prone are these polypoid masses in the colon and rectum to degenerate into carcinoma, that removal of the precancerous lesion is always justifiable. Unfortunately, they are often so numerous that an operative procedure for their removal, short of colectomy, is impossible.

The incidence of location of carcinoma, as already stated, in the 270 cases with which we have dealt, showed 75 per cent in the sigmoid and rectum. In another consecutive series of 100 cases, taken from our clinic records, the location was as follows:

TABLE II

12 per cent	were in the cecum
5 per cent	were in the ascending colon
3 per cent	were in the hepatic flexure
3 per cent	were in the transverse colon
1 per cent	were in the splenic flexure
7 per cent	were in the descending colon
15 per cent	were in the upper sigmoid
54 per cent	were in the rectum and rectosigmoid junction

The ages in this series of 100 cases were as follows:

TABLE III

1 case	occurred at 24 years of age
3 cases	occurred between 30 and 39
18 cases	occurred between 40 and 49
31 cases	occurred between 50 and 59
39 cases	occurred between 60 and 69
8 cases	occurred between 70 and 79

As has already been stated in discussing the symptomatology of these lesions, changes in bowel function must be a quite constant feature in connection with carcinoma of the colon. In this series of cases, constipation occurred in 56 per cent of all the cases, but in 65 per cent of those cases with carcinoma of the sigmoid. There was no disturbance in bowel function in only 9 per cent of the total number of cases. Twenty-seven per cent complained of diarrhea, half of these having carcinoma of the rectum, while but 8 per cent gave a history of alternating diarrhea and constipation.

The surgical treatment of carcinoma of the colon and rectum to accomplish any prospect of cure involves surgical procedures of major magnitude, such as abdominosacral removal of the entire rectum including the anus and lower sigmoid and extensive excisions of large segments of the colon for carcinoma located anywhere between the cecum and the rectosigmoid junction. There are several features about surgery of the large intestine which particularly tend to result in a high mortality

rate; many of the patients with this lesion are frequently advanced in years and poor surgical risks. They also frequently present themselves for surgical treatment with complete obstruction or some degree of obstruction. The character of the colon itself with its longitudinal bands, sacculations, and epiploic appendages, makes it a structure which lends itself poorly to an accurate suture line and anastomoses. In addition to this, as has already been stated, resections of the right side of the colon are made hazardous by the fact that the liquid contents of this side of the colon are easily disseminated and due to the virulent organisms harbored here, peritonitis readily results. Due to the even dry character at times of the fecal contents on this left side of the colon, solid masses of feces tend to lodge at the suture line where the colon is of necessity somewhat narrowed after resection, producing obstruction, distention, and danger of rupture and leakage at the suture line.

In removals of cancer of the rectum, the most desirable operative procedure is one such as the Miles operation, in which all of the rectum and sigmoid, including the anus, is removed at one time, together with the immediate establishment of a colostomy. Unfortunately, this procedure is so extensive that many patients weakened by the progress of the disease and with lowered resistance because of complete or incomplete intestinal obstruction cannot possibly endure such a radical procedure. The disadvantages of many of the two-stage abdominosacral operations for carcinoma of the rectum have been that they have involved complete division of the sigmoid above the level of the malignant lesion with complete loss of blood supply to the lower segment, an immediate colostomy being established and the lower segment of feces-filled sigmoid and rectum, unnourished by any nutrient vessel, being placed beneath the peritoneum in the pelvis to be removed at a later date. This results in necrosis of the lower segment, in dissemination of infected feces with pelvis, toxic absorption, and a marked intoxication of the patient.

We have modified this plan, as shown in Figs. 2, *a*, *b*, *c*, and *d* and 3, *a*, *b*, *c*, and *d* whereby a first-stage operation is done, establishing the colostomy, implanting the lower end of the cut sigmoid just above the pubis, ligating all of the vessels of its mesentery down to, but not including, the superior hemorrhoidal artery, and thus sustaining vascularization to the lower segment between the first and second operation. The wound is closed with a left ileac end colostomy through a counter incision and about the lower segment of sigmoid implanted just above the pu-

\* Brit. J. Surg., 15, 1927.

bis, clamps being left upon both ends of the bowel as shown in Fig. 2, *d*. These clamps will slough off at the end of four to six days, by which time the wounds are sufficiently healed so that contamination does not occur.

At the end of six to seven days, an anal speculum can be introduced through the sphincter, an irrigating tube, as shown in Fig. 3, *a*, inserted in the upper end of the rectal segment, and this segment irrigated through and through two, three, or four times daily, this being repeated for ten to twelve days until the segment of rectum or sigmoid containing the malignant lesion is thoroughly cleansed. Two days before it is settled that the second-stage operation will be done, this segment is irrigated once or twice with mer-

curchrome to in some measure sterilize it. The second-stage operation is then done by closing the stump of sigmoid above the pubis (Fig. 3, *b* and *c*), by reopening the wound, ligation of the single nourishing vessel, the superior hemorrhoidal (Fig. 3, *d*), severing the parietal peritoneum above the rectum, separating it from the hollow of the sacrum, and pushing the rectal segment down into the pelvis. The pelvic peritoneum is then closed above this segment, the abdominal wound closed, the patient turned on his side, the coccyx removed, and the entire segment of rectum and anus removed from behind (Fig. 3, *d*).

The advantages of this operative procedure are: Between the first and second stage due

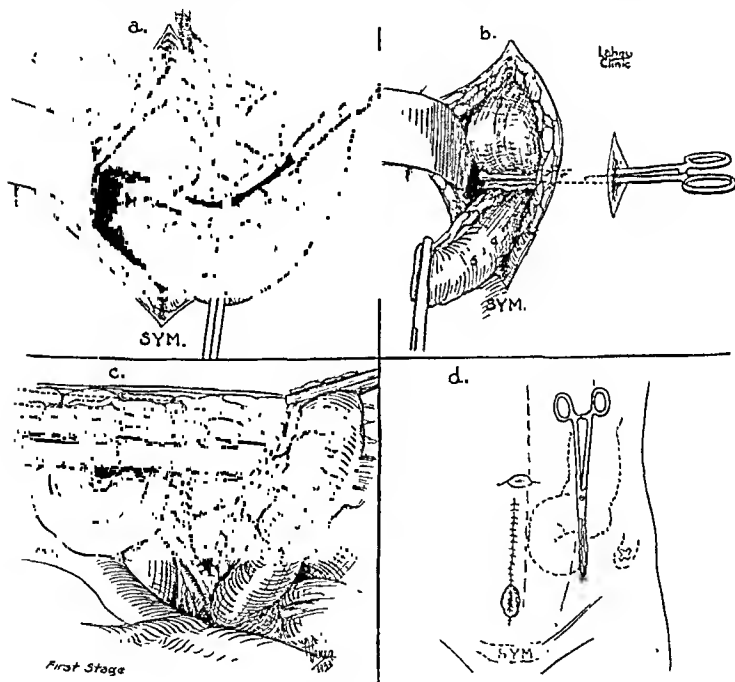


Figure 2

- An incision has been made from the pubis to the umbilicus, the sigmoid pulled out and its mesentery ligated from the bowel down to, but not including, the superior hemorrhoidal artery.
- A counter incision has been made to the left. An Ochsner clamp reaches through it and grasps the bowel. Another clamp grasps the bowel through the median incision and the bowel is cut between the two clamps with the cautery and the ends sterilized.
- The upper segment of sigmoid has been drawn through the left counter incision to be the permanent colostomy. The lower segment is implanted in the median wound just above the pubis, the clamps remaining on both ends until they slough off.
- The first stage completed. The left colostomy established and clamp still on the end of the sigmoid. The lower segment implanted in the median wound just above the pubis. The clamp not shown on this segment is likewise left on the end of bowel until it sloughs off.

to the fact that the lower segment of bowel is still vascularized, there is no urgency concerning the second part of the operation. One can delay as long as desired between the first and second stages until the bowels are moving well through the colostomy and until, with irrigation, the lower segments of rectum and sigmoid, as shown in Fig 3, *a*, are entirely clean.

One of the great advantages of this procedure in posterior removal of the rectal segment is lack of infection. The posterior wound in almost every instance heals by pri-

mary intention. Following other methods of removal of the rectum, contamination of the posterior wound not infrequently occurred, together with sloughing resulting in several weeks of discharge together with toxic absorption from the infected wound, a feature having definitely to do with mortality in these cases.

As evidence of the fact that carcinoma of the rectum has become a less serious operation in our hands, 29 consecutive radical operations for carcinoma of the rectum have now been done without a death. These opera-

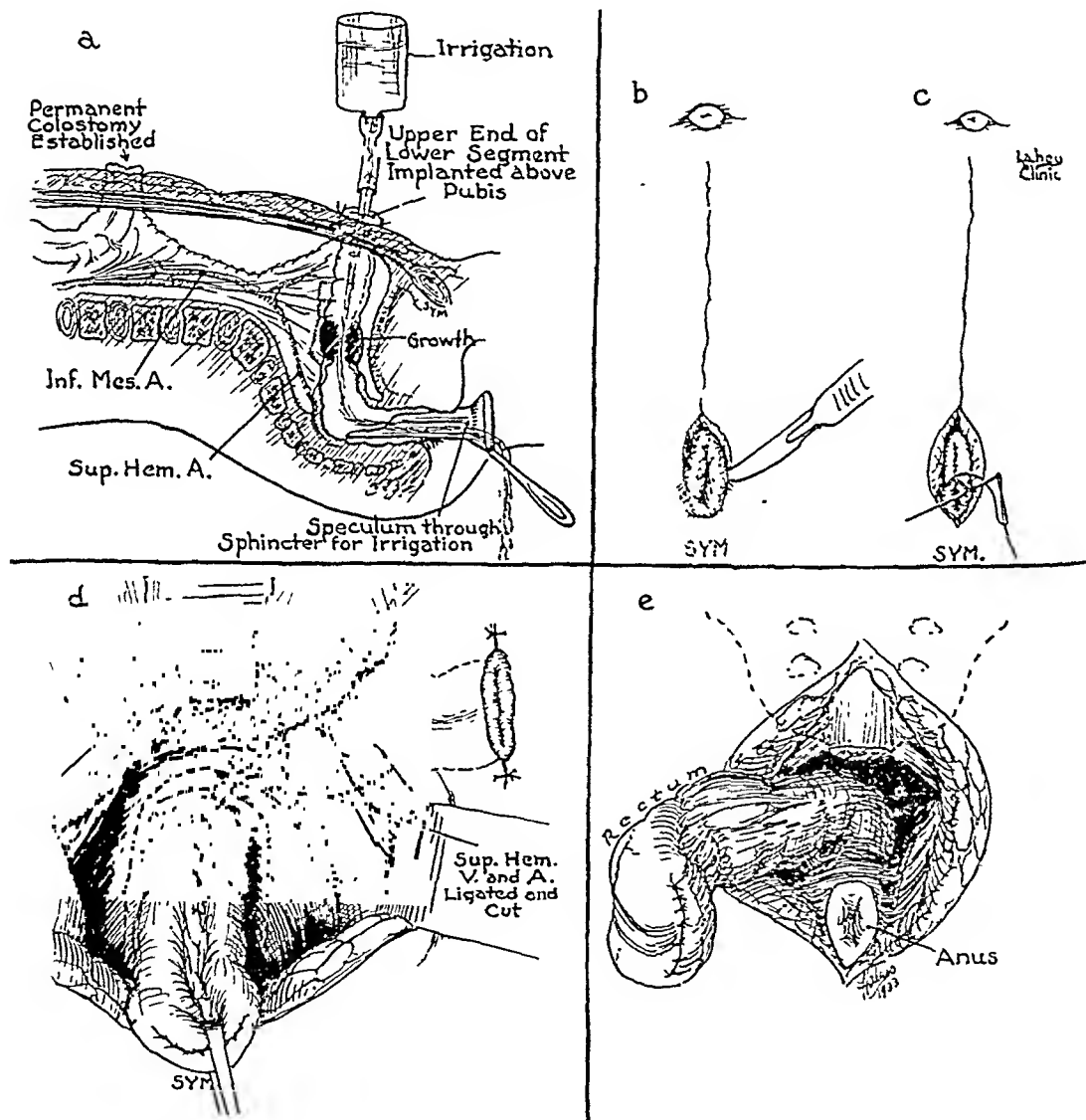


Figure 3

- (a) Shows the vascularized rectal segment between the first and second stages of the operation and the method of cleansing this segment by irrigation between the first and second stages of the operation.
- (b) Beginning the second-stage removal. An incision made about the open end of the sigmoid implanted in the lower part of the median incision.
- (c) The open end of bowel closed as the first step in the second-stage removal of the segregated lower segment.
- (d) The median abdominal wound reopened, the superior hemorrhoidal artery and vein ligated and the incisions in the pelvic peritoneum represented by dotted lines around the rectum. The rectum is separated from the hollow of the sacrum and its pelvic attachments pushed down into the pelvis, the peritoneum closed over it and the abdominal wound closed.
- (e) The patient has been turned on her side, the coccyx removed and the rectum removed from behind.



tions, together with the colon resections, have all been done by Dr. H. M. Clute, Dr. R. B. Cattell, and myself. This mortality therefore does not represent that of a single individual. This operation, I believe, certainly in our hands, markedly diminishes the mortality for radical operations in carcinoma of the rectum.

We have always felt that primary resection, either of the proximal or distal colon, was

fraught with serious danger due to the reasons already mentioned earlier in the discussion. We have always felt that when one resects a carcinoma of the ascending colon or of the descending colon, makes a primary anastomosis, and drops the sutured colon back into the abdomen, the die is cast and the patient lives or dies dependent entirely upon factors no longer under the surgeon's control.

Everyone who has been interested in the

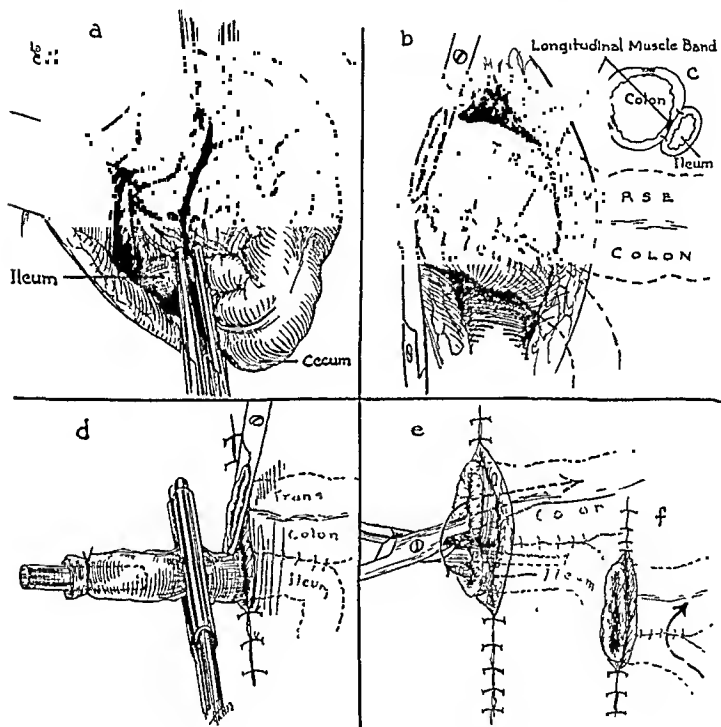


Figure 4—Resection of the Colon by a Modified Mikulicz Plan

- (a) Demonstrates diagrammatically the method of resecting the right colon and the terminal ileum. Ochsner clamps are placed on the segment of colon to be resected above the growth shown as a shaded area in the illustration and on the ileum. The mesentery is shown cut away and the bowel is severed with a canterly between the clamps, and the ends sterilized.
- (b) Shows the ileum approximated to the transverse colon, both ends being held in the Ochsner clamps, thus preventing soiling.
- (c) Shows diagrammatically the anteroposterior suture of approximating the ileum to the transverse colon compression as part of this resection. Note that the mesentery to the ileum is ligated and a long section or staggered section of ileum is drawn out. The end of the transverse colon is shown in clamps but for purposes of illustration, the clamp is not shown on the end of the ileum. A rubber covered clamp is shown to prevent escape of fecal contents and a glass tube is tied into it. The glass tube having been tied in the end of the ileum is connected with rubber tubing to a bottle at the side of the bed and immediate drainage in moderate degrees of obstruction can be accomplished.
- (d) Shows the Mikulicz plan of placing one jaw of the Ochsner clamp in either lumen of the colon and ileum and locking it. This results in severing of the septum in four to five days and the partial establishment of the fecal stream. Because of the liquid contents of the ileum, a good deal of the ileal contents pass along the transverse colon. At this stage the patient is sent home for two months during which time edema disappears from the wound.

surgery of the large bowel must admit the dangers related to primary anastomoses at this location. It is difficult to do primary suture of the colon without some degree of contamination. Loss of blood supply to the cut edge of the colon is always a possibility. The colon is often so thin, particularly when any obstruction has been present, that satisfactory retention of sutures must always be in doubt. Even in the presence of preliminary cecostomy, one still must admit the dangers of leakage and contamination through primary sutures of large bowel, either with end-to-end or side-to-side anastomoses.

With the above view in mind, I published in *Surgery, Gynecology and Obstetrics*,\* a

method of resecting the entire right colon and hepatic flexure by a modification of the Mikulicz plan of procedure, whereby the ileum could be approximated to the remnant of the transverse colon by the double-barrel plan, as practiced in the Mikulicz procedure, with later cutting of the spur and secondary closing of the resulting fistula some weeks after the primary excision of the growth.

This same modification of the Mikulicz plan, whereby a large segment of the bowel containing the growth, together with its adjacent mesentery is removed, clamps being left on the cut ends of the bowel, a double-barrelled spur being established, later cut and closed at a secondary operation, has proven of

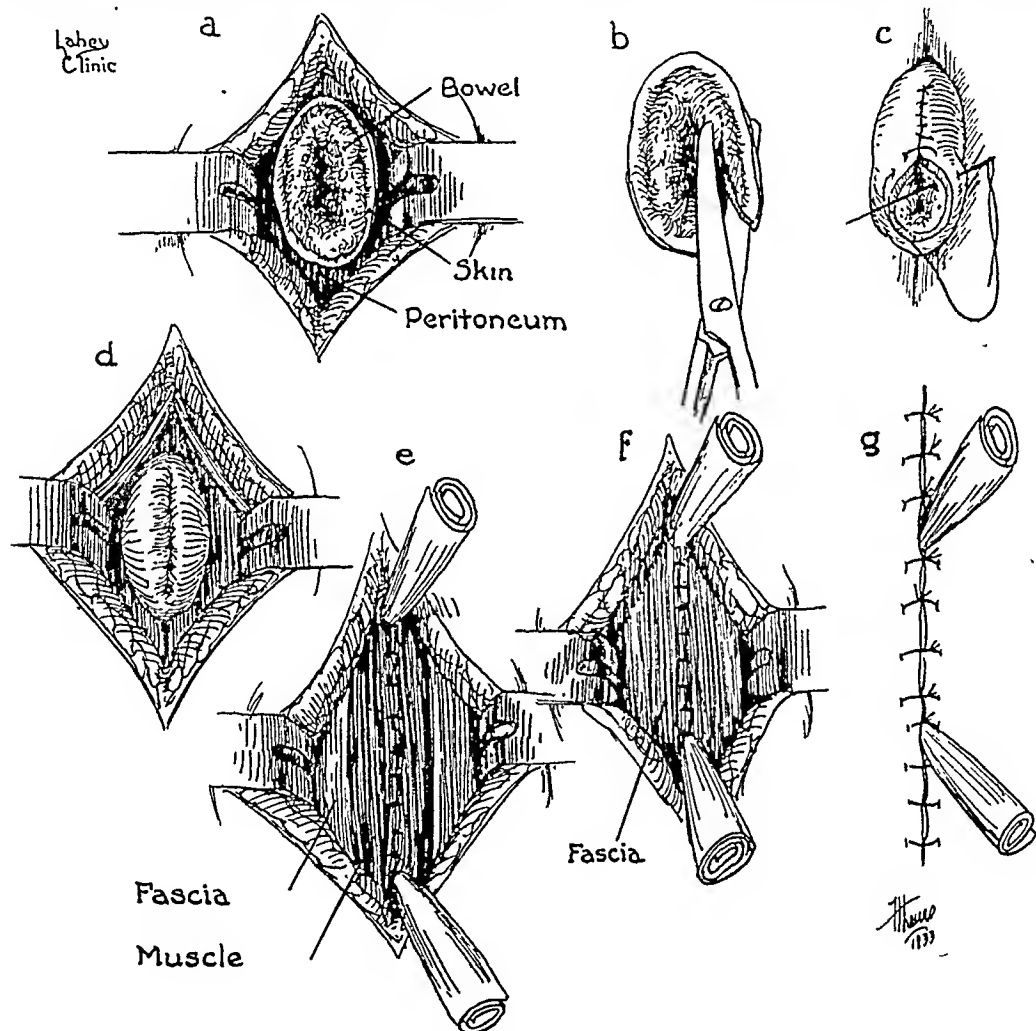


Figure 5.—Second Stage of the Modified Mikulicz Removal

- (a) Shows the incision about the lumen of the artificial anus. This incision is carried through the skin, fascia, and muscle down to, but not through, the peritoneum.
- (b) The excision of the skin attached to the end of the artificial anus, refreshing the edges of the lumen.
- (c) The in, out, and over closure of the enterostomy opening inverting the edges of the bowel into its lumen.
- (d) A second row of inverting stitches closing the end of the lumen. Note that the peritoneum is not opened and that the entire closure is extraperitoneal and hence safe.
- (e) The method of carrying rubber dam down to the closed end of bowel and suture of the muscle over it.
- (f) Suture of fascia.
- (g) Suture of the skin.

There has been some leakage and contamination in a few of these cases but none have failed to close ultimately.

\* Surg., Gyn. and Obst., 54:923-929, 1932.

marked value in our hands in carcinoma of the colon at all levels. In a series of 14 cases done in the last two years, but 2 patients (14.3 per cent) have died, one, an unavoidable death due to perforation of the lesion with abscess previous to operation, and the second a patient who succumbed to shock following this extensive procedure, due, I believe, since nothing was found at autopsy, largely to exhaustion as the result of an extremely large lesion and the length of time that the patient had had it.

The Mikulicz plan of procedure is applicable to any portion of the large bowel from the cecum to the rectosigmoid junction, except at the median portion of the transverse colon, and in some instances it can be applied here. In no case out of the series has the secondary fecal fistula failed to be successfully closed. This procedure has practically eliminated the danger of peritonitis in this operation, and, at the same time, it has permitted just as radical removals as does resection with immediate suture. It is infinitely safer in our hands than is the procedure of primary removal and primary suture.

The illustration of a plan of "staggering" which we have described with this operation, permitting immediate establishment of intestinal drainage in cases in which any degree of obstruction is present, is submitted (Fig. 4, d). This allows immediate decompression of a bowel distended from obstruction and is in our experience, a life-saving measure in connection with cases of this type. Figures

4, a, b, c, d, and e and 5 a, b, c, d, e, f, and g demonstrate the technical steps of the procedure.

#### OPERABILITY IN CARCINOMA OF THE LARGE INTESTINE—270 CASES

Inoperable patients (palliative)	122	45 per cent
Operable—radical resections	148	55 per cent

#### CARCINOMA OF LARGE INTESTINE—RESULTS FOUR YEARS AFTER OPERATION

Colon	47 per cent well (no recurrence)
Rectum	42 per cent well (no recurrence)
No patient has recurred after four years	

#### CONCLUSIONS

The symptoms and the operative dangers of carcinoma of the large intestine at different levels is discussed as relates to variation in function and anatomical structure.

Data as to location, percentage, age, mortality, and length of life after operation are submitted.

Patients should be urged that if they wish to discover carcinoma of the colon at an early and hopeful stage, attention must be paid to any abnormality in bowel function, that when such abnormality is present, bismuth enemata, and proctoscopy must be submitted to, and with the very distinct understanding that to diagnose one case early many negative findings must be expected. The reward of such a plan is a quite possible cure if a lesion is found and thankful mental relief if it is not.

*Bill to Authorize Hospital Insurance.*—A bill proposing to amend the state insurance laws to permit establishment of group payment plans of hospital care has been introduced in the state legislature. The measure is the outgrowth of a study made by the United Hospital Fund of New York, as a result of which a group plan was proposed to the state commissioner of insurance, who held that the existing law does not permit the establishment of such plans, and the present bill is designed to remove this obstacle.

S. 115 proposes to create a board of hairdressers and cosmetologists and to regulate the practice of hairdressing and cosmetology. S. 155 and A. 128, to amend the medical practice act, proposes to permit the board of regents to restore a license that has been forfeited, because of the commission of a felony, if the former licensee is pardoned by the governor of the state or by the President of the United States of the felony of which he was convicted. The present law does not permit the board to restore such a license if the person has been

convicted of a felony committed in his professional capacity. A. 77, to supplement the medical practice act, proposes to prohibit any physician or any other person or corporation from giving away, selling or offering to give away or sell any article bearing on it or annexed thereto any mark or symbol "pertaining in any way to the advertising of medical care or pertaining to any inducement of whatever nature respecting the furnishing or offering of medical care by means of such advertising." The bill proposes, too, to make it unlawful for any person or corporation, other than a duly licensed physician, to employ any person other than a licensed physician for the practice of medicine. The latter prohibition, however, is not to be construed to apply to the practice of medicine in the lawful operation of a hospital, dispensary, or other legally incorporated institutions. S. 45, A. 141 and A. 169, to amend the workmen's compensation act, propose, in effect, to make compensable all occupational diseases contracted in the course of an employment covered by the act.

## SOME PRACTICAL CONSIDERATIONS IN PROCTOLOGY

By FRANK C. YEOMANS, M.D.  
New York, N. Y.

Read at the Twenty-seventh Annual Meeting of the Sixth District Branch of the Medical Society of the State of New York, Norwich, N. Y., October 18th, 1933.

The field of proctology comprises the colon, especially its distal portion; the rectum, and the anal canal. Due to improved methods of examination together with laboratory aids, the diagnosis and treatment of diseases of this formerly obscure area have now attained a high degree of accuracy. This presentation will cover briefly some points of general interest which, I trust, may be of practical value.

**PILONIDAL SINUS (SACROCOCCYCEAL CYST).**—This is a congenital anomaly situated over the sacrum and is due to failure of even fusion of the ectoderm in this part of the midline. It is evidenced by a dimpling in about 30 per cent of young infants. In the majority of cases the depression is obliterated as the child develops, but in a few it persists. In some of the latter it causes no symptoms while in others pathologic changes occur. The latter group comprises mostly husky young men, from 18 to 35 years of age, who are hirsute. Thickening of the panniculus deepens the sinus, thus forming a human culture tube at constant body temperature, lined with skin, and receiving the secretion of sweat glands and hair follicles, and containing myriads of bacteria and irritating hair. Inflammation and discharge of pus ensue, for which relief is sought. Quite commonly a diagnosis of abscess or fistula is made, and treatment by incision and drainage is followed by prompt relief. Unfortunately this does not end the trouble permanently. Usually within about six months there is a recurrence and temporary relief by the same means, unless close inspection is made. The examiner will then find over the lower sacrum an indurated and usually inflamed swelling, and precisely in the midline he will see from two to five openings, some minute, others larger and fistulous, through which bristly hairs may emerge, and discharge oozes or can be expressed. Naturally, recurrence followed simple incision for we are dealing with a cyst.

The only effective treatment is to excise en masse, under local or low spinal anesthesia, the entire area involved by an elliptical skin incision, deepened in wedge-like fashion to the sacral fascia. The wound heals by granula-

tion, but occasionally cases, in which infection has been reduced to a minimum by drainage, may be sutured and primary union obtained.

A majority of the cases in my practice had been operated upon from one to four times with the erroneous diagnosis of abscess or fistula.

**PRURITUS ANI.**—This is a most tantalizing and distressing ailment which may lead to neurasthenia and other neuroses. True pruritus ani is a definite dermatitis of the perianal skin due to infection. The chief offending organisms are *B. coli* and streptococci which gain entrance directly or through anal ulcers, sinuses, or crypts. Clinically it occurs in the moist and the dry forms. It must be differentiated from trichophyton infection and various dermatoses. Many of the latter are due to neglect of local hygiene or are secondary to pathologic states of the anus and rectum.

Appropriate surgical treatment of infected crypts of Morgagni, hypertrophied anal papillae, chronic fissures and ulcers of the anal canal, and prolapsing ulcerated hemorrhoids will frequently eliminate the trouble. True pruritus must be carefully differentiated from these cases. For example, the removal of simple internal hemorrhoids may aggravate the itching of a complicating genuine pruritus ani.

Appropriate diet and cleanliness are important in the therapy. Suitable local treatment of the involved skin taxes the ingenuity of the clinician and the patience of the sufferer. The subcutaneous injection of an anesthetic in oil frequently relieves the itch promptly and is often curative. One of the best of these is benacol. Due to its possible attendant dangers, treatment by the x-ray is contra-indicated.

**COCYGDYNIA.**—The pain in coccygodynia is usually referred by the patient to the rectum. Without careful local examination its true nature may be missed. It most commonly follows trauma, as parturition or a fall. After fissure, infected crypts of Morgagni and other painful lesions of the anal canal have been eliminated by examination as the causative factor, the index finger is inserted into the rectum and counter-pressure is made by the thumb of the same hand externally. Thus

one can determine the position and contour of the coccyx, its possible dislocation, and normalcy or ankylosis of the sacrococcygeal joint.

Next, the soft tissues at the tip and sides of the coccyx are compressed. If the exquisite and characteristic pain, like that of which the patient complained, is produced it is a case of coccygodinia, *i. e.* a neuralgia or neuritis of the coccygeal plexus of nerves.

Formerly it was considered good practice to remove the coccyx at once to obtain relief. In some cases the pain persisted after the operation.

Several years ago, concerning the trouble to be in the nerves and not in the bone, I began to inject 70 per cent alcohol into the painful area, after the method of Schlösser in trifacial neuralgia, with most happy results. In the majority of cases, from three to five injections give complete and permanent relief. In any case, even of fracture or dislocation of the coccyx, or ankylosis of the sacrococcygeal joint, unless the tip of the bone points backward, the injections, which are harmless and easily given in the office, should be tried before resorting to excision.

If the injections fail, excision of the coccyx is usually successful, not primarily on account of the removal of the bone but chiefly because the plexus of nerves is severed or excised at the same time.

**ABCESS**—In its onset a painful, tender, in duration, the result of external or internal infection, may occur at any point about the anus. Should this early induration be incised at once? No. I think not. First, an tiplogistics should be applied until a definite point of fluctuation can be determined. Then the abscess should be opened widely, *i. e.*, the skin incision should be as long as the broadest part of the abscess. The stab puncture so frequently done obstructs free drainage, and suppuration is prolonged. After the first packing, drainage should be very light and healing prompt.

If discharge persists from the sinus of a nontuberculous abscess correctly treated, a complete fistula has most probably developed which is continuously infected through a portal of entry in the mucosa usually situated between the sphincters. Cure will not be obtained until the fistula is incised its entire length or the tract excised.

Due to tortuosity of the fistulous tract, a probe may not pass through its pathological internal opening. The latter may be simply and painlessly demonstrated by injecting an indigo dye in peroxide of hydrogen solution through the external opening.

In the event that a complete fistula was present and discovered when the abscess was opened, the rule of first draining the abscess is correct, in order to reduce the active infection before treatment of the fistula. Much less surgery is thus required and sound tissues are not exposed to the virulent infection.

Abscesses sometimes occur in suckling babes and frequently fistula results. The abscess should be drained at once and after the active infection has subsided the fistulous tract may be excised intact and the wound closed by suture. In the actively growing tissues of infants primary union may be expected quite in contrast to the chronically infected tissues of adults.

Occasionally the question arises of opening an abscess which may or may not, be tuberculous, in a patient having pulmonary tuberculosis. Tuberculous abscesses, especially if secondarily infected markedly aggravate the lung condition, yet many physicians oppose surgical intervention because they either have had cases in their own practice so treated or have heard of them in the practice of others, which within a few months after the operation, developed general military tuberculosis to which the patients succumbed. This is recorded in the older textbooks and was true when originally penned, but it is not true to-day. What makes the difference? It is the technique of the operation. In all cases suspected of being tuberculous the patient receives a small dose of low spinal or gas oxygen anesthetic and the incisions are made with the electric crutery. The eschar resulting seals the lymphatics and protects the wound margins until granulations—nature's own protection—form and bar general dissemination of the infection. The relief to the patient both local and general, is surprisingly great.

Pain and bleeding are the two most urgent symptoms that bring the proctologic patient to the doctor.

**FISSURE OF THE ANUS**—The exquisite pain of fissure is out of all proportion to the size of the lesion. Local irritation of the fissure usually causes spasm of the sphincter muscles aggravates constipation—the commonest primary cause of the fissure—and may finally lead to intestinal toxemia and its sequelae. Local infection through the fissure may result in abscess and fistula. Irritation of the nerve terminals exposed in the fissure may reflexly cause symptoms simulating cystitis, dysmenorrhea, lumbago, sciatica and various neuroses. Consequently a fissure should be treated promptly.

The first essential is to obtain a duly boweled action by properly regulated diet and mild

laxatives, not drastic cathartics. The mistake is frequently made of tying up the bowels. This gives only a false sense of relief for when a movement finally occurs the scybala are apt to reopen the fissure.

If seen within a few days of its occurrence, an acute fissure can usually be headed by injecting a local anesthetic beneath it and into the adjacent external sphincter muscle. Quinine and urea hydrochloride in 5 per cent solution and benacol are the types of anesthetic used to produce prolonged analgesia and relaxation of the sphincters. As soon as the anesthetic has taken effect the sphincter muscles are gently dilated and pure ichthylol is applied to the lesion.

When dealing with a recent painful lesion of the anus, the question of a primary chancre may arise and is to be decided at once by finding *Spirochitae pallidae* in the dark-field examination of secretion expressed from the sore.

A chronic fissure, the familiar "irritable ulcer" with muscle spasm, is best treated by dissection out of the scar tissue under local anesthesia and superficial division of the external sphincter through the usual site of the lesion, namely, posteriorly, but sometimes in the anterior commissure in women. This procedure always cures; therefore, it is more reliable than division of the anal canal under general anesthesia.

A chronic fissure must be differentiated from an epithelioma which is very painful and exquisitely tender, and infiltrates adjacent tissues in a characteristic manner. Three cases of epithelioma which were being treated under the erroneous diagnosis of chronic fissure have occurred in my practice.

**HEMORRHAGE.**—Bleeding from the rectum is such an important symptom that we have not rendered full service to the patient until its source is determined, if possible. The commonest sources of massive hemorrhage, in my experience, have been malignant disease, usually of the rectum; rupture of sclerotic varices of the mucosa in the elderly, rupture of a hemorrhoidal vein, erosion of a blood vessel in chronic ulcerative colitis and, in adolescents, bleeding from an ulcerated Meckel's diverticulum.

Sudden, massive hemorrhage from the intestine often gives rise to alarming symptoms. As a rule, surgical intervention is not urgent. It may end in disaster and the source of the hemorrhage remain undiscovered at operation unless it was determined in advance of the abdominal exploration. With palliative treatment, aided by the fall of blood pressure which naturally accompanies the bleeding and favors coagulation, usually the active hemor-

rhage is checked spontaneously. A later study under more favorable conditions is more likely to disclose the source of the bleeding and dictate the correct procedure to prevent its recurrence.

The commonest source of rectal bleeding is internal hemorrhoids. Periodic blood loss from hemorrhoids in the plethoric may be salutary, but regular, daily bleeding frequently causes severe secondary anemia and its consequences. Several of my case records show a hemoglobin percentage of 30 or less and in some instances the diagnosis had been pernicious anemia or cancer of the gastro-intestinal tract.

The diagnosis of bleeding from internal hemorrhoids may present difficulties. Generally, with the cooperation of the patient, the tumors can be protruded and seen. Exceptions are a tight sphincter in nervous persons, and muscle spasm due to fissure. Hemorrhoids, unless thrombosed or inflamed are not painful. Notable pain is usually due to a complicating fissure.

How may we recognize active internal hemorrhoids that can not be extruded? Digital examination is practically negative except when the vessels are inflamed or thrombosed, or after chronic fibrous changes have occurred. In the latter, prolapse and not bleeding is the dominant complaint. The most reliable method of diagnosis of concealed internal hemorrhoids is their inspection through an anoscope. If a complicating fissure is present, topical application of 4 per cent solution of cocaine will obtund the pain during the examination.

Hemorrhoidectomy under local anesthesia is the best procedure for permanent results; but when operation is contra-indicated, as in pregnancy, old age or constitutional conditions, such as diabetes and tuberculosis, the injection method gives very satisfactory palliation in uncomplicated internal hemorrhoids.

Even if actively bleeding internal hemorrhoids have been demonstrated, the examination does not end there for piles may be, and too frequently are, associated with, or secondary to, more serious pathologic conditions at a higher level, notably cancer and stricture. It is conservatively estimated that 15 per cent of patients having cancer of the rectum are treated palliatively or operated upon for "bleeding piles" when the neoplasm is within reach of the examining finger or the proctoscope. The practical conclusion is that no patient who has bleeding internal hemorrhoids should undergo treatment until a digital examination and proctosigmoidoscopy have been done.

Medical literature records an increasing

number of cases of hemorrhage especially in children and adolescents, traceable to an ulcerated Meckel's diverticulum. The bleeding may be periodic, of rather large volume and its source obscure. Unfortunately roentgen study does not demonstrate a Meckel's diverticulum, so celiotomy is justified in these cases of obscure hemorrhage after routine measures of diagnosis have failed. Needless to say, the terminal three feet of ileum should be examined for a possible diverticulum in the course of any abdominal exploration.

Bleeding in children is usually attributed by the parents to prolapsing hemorrhoids. In fact, children seldom develop hemorrhoids before puberty. What the mother really sees is a partial or complete prolapse of the rectum, or a rectal polyp which may be felt by the finger or discovered by the proctoscope.

Another and rarer source of bleeding, seldom suspected, occurs in constipated children and is due to invagination of the sigmoid into the rectum. Congestion and ulceration may ensue, with the passage of fresh blood with the stool. This condition can be recognized only by instrumental examination and corrected by restoring normal physiology of bowel function.

**DIGITAL EXAMINATION.**—The experienced finger not only feels anything within the bowel lumen but also palpates lesions of the terminal  $4\frac{1}{2}$  in. of the rectum proper, such as a mural abscess, indurated ulcers, stricture and tumors; and pathologic changes in adjacent organs, as the prostate and seminal vesicles, and displacements, as a retroverted uterus.

A point of diagnostic import is careful palpation of the rectovesical culdesac. This examination should never be omitted in cases of suspected acute appendicitis in men. Certain chronic conditions may also manifest themselves here. This refers particularly to implantation carcinoma in which cancer cells, detached from a tumor situated at a higher level within the peritoneal cavity, gravitate to the culdesac, engrafting themselves on the peritoneum, and produce a palpable induration, described by Blumer as a "rectal shelf." When this is felt per rectum, the primary tumor has metastasized and is radically inoperable.

Plastic tuberculous peritonitis may, to palpation, mimic carcinoma in the culdesac. However, it is less indurated and is to be differentiated by the history, symptoms, and other physical signs.

Examination of a parous woman is completed by a vaginal examination.

**PROCTOSIGMOIDOSCOPY.**—How about lesions beyond reach of palpation? Here the modern

pneumo-electric sigmoidoscope is indispensable, serving as an elongated finger with a human eye. By it one can readily inspect directly the entire rectum and, in about 75 per cent of cases, the distal loop of the pelvic colon. The condition of the mucosa is clearly seen as normal, atrophic, or hypertrophic; and various types of ulceration may be recognized, such as tuberculous, hemorrhagic, chronic nonspecific, and amebic. Material is taken directly for smears, cultures, and the making of autogenous vaccines.

In its early stages amebic dysentery presents a pathognomonic picture and the diagnosis can be confirmed at once by finding on the warm stage of a microscope motile *Amebae histolyticae* in the scrapings from the characteristic, discrete, pearl-like, necrotic ulcers.

During the past 35 years intercourse with the tropics has so increased that amebiasis is comparatively common in the North. Frequently carriers of the infection go from one physician to another and from clinic to clinic without a correct diagnosis because of lack of competent examination. However, not all of these cases are imported, many being native; therefore it does not necessarily follow that a patient with amebiasis give a history of residence in the tropics.

From an experience in approximately 125 cases of amebic infection, I would emphasize the gratifying results when thorough treatment with emetine hydrochloride and stovarsol is instituted sufficiently early, that is, before the specific ulcers have become secondarily infected with the usual intestinal flora. Then the specific remedies alone are without avail and additional measures, appropriate for the treatment of nonspecific chronic ulcerative colitis, must be employed.

**STRICTURE AND TUMORS.**—A stricture or tumor is clearly seen through the proctoscope, and a graduated tube of small caliber can usually be passed through the lumen of a stricture or beyond a tumor to the normal mucosa above, thus determining the length of the process.

**Biopsy.**—In all cases of doubtful diagnosis it is my practice to do a biopsy with the harmless high-voltage electric snare and so to remove uncertainty at once. The alleged danger of possible dissemination of cancer cells by a properly performed biopsy is minimal in comparison with the positive information obtained. Major values of the biopsy are: (1) differential clinical diagnosis, (2) prognosis, and (3) to indicate therapy. In the case of a very small tumor, the entire lesion should be removed for study. I know of three cases, at least, in which the rectum was excised without previous biopsy of the ulcerous lesion and careful

histologic study of the specimens demonstrated only chronic inflammation. Fortunately, all three patients recovered from the operation.

The bleeding from a solitary polyp is promptly ended by its removal by ligature or fulguration when it is situated low in the rectum, or when at a higher level, by fulguration or the electric snare passed through the proctoscope. If proctoscopy reveals a condition of multiple polyposis, in which myriads of small, usually adenomatous tumors are commonly scattered throughout the colon, local excision is futile. No measure short of ileostomy or cecostomy efficiently diverts the continuous infection which stimulates the growths. Should the tumors not recede or disappear after enterostomy, excision of the involved bowel is the only hope of cure. If neglected, over 40 per cent of cases degenerate into carcinoma.

All specimens of tissue removed at operation or otherwise should be studied histologically.

Because of the protean manifestations of syphilis, a Wassermann test of the blood should be made in every case of ulcer, stricture, or tumor of the rectum or colon.

Urinalysis should be routine in all cases. Glycosuria or a high blood sugar has explained a number of cases of pruritus and of progressive weight loss. In some of the latter, malignant disease of the gastro-intestinal tract was suspected.

*Roentgen Ray Examination.*—When the patient has symptoms referable to the distal bowel or bleeding is present, frequently the first thought is an x-ray study of the gastro-intestinal tract. This is putting the cart before the horse. The rays usually fail to demonstrate lesions of the lower pelvic colon and rectum, such as ulcers, small polyps and adenomas, and early cancer. In fact, the false sense of security engendered by a negative roentgen report may so delay correct diagnosis that the time for hopeful therapy may be lost.

The other methods outlined above establish the diagnosis in the vast majority of diseases of the rectum and pelvic colon and, in my experience, they should be first applied. With these data on hand, the roentgenologist is in a position to study his patient with a high degree of intelligence.

555 PARK AVENUE

### CHISELLING THE POOR

In every relief program are found three types of beneficiaries. There is the professional type, made up of the chronic "down-and-outers," derelicts of society who are floating rudderless in the sea of human endeavor without hope or expectation of regaining anything like their proper places in the social fabric. These people constitute the nucleus around which organized relief is found, wherever people congregate anywhere on the face of the earth. They have existed since time immemorial and they are as much a fixed part of the earth's population as is the usual productive majority. Quick to complain, difficult to satisfy and hard to control, they constitute a knotty problem which sociologists, psychologists, and political economists have long sought to solve and remedy, without evidence of success. We must, therefore, accept them as a fixed responsibility at least for the present and we are not now concerned with anything more than recognizing their existence and fulfilling our duty to them as fellow humans.

The second type is derived from the unfortunate people who have, especially in stressful times like these, temporarily at least, reached the end of their resources and are forced to seek relief. They are properly entitled to the consideration that humane impulse dictates and for them the resources derived from taxation and other sources of public revenue, as well as those resulting from private benevolences are provided and administered, always with the thought of maintaining the self-respect and preserving the potential earning powers of these people who have been caught in the maelstrom of economic stress, often through no fault of their own.

The third type represents a curious development of modern trend, the people who have some financial means but who, selfishly try to take advantage of the resources which have

been provided for their less fortunate fellows. It is safe to assume that this class has been fostered and encouraged in its development by the efforts of our friends the sociologists in their desire to gloss over the stigma which is supposed to be attached to the receipt of public assistance. This sociological influence has extended much further than the field of public relief, so that we find it operative in the conduct of penal affairs as well. Our present system of conducting prisons and workhouses is apparently based on the reformatory idea, praiseworthy enough in theory, but clearly not applicable without individual classification. In order to save the first offender, the professional criminal is included in the program, so that prison life is made almost attractive. The real victims are their unoffending families.

But let us return to relief proper; and this now includes not merely the furnishing of food, shelter, heat, and clothing, but hospital, dispensary, home treatment, and nursing. The point we are trying to make is, that all these forms of assistance belong purely and solely to the first two types of beneficiary and not the third. This last, the chiseler, can be fairly easily stopped in the food lines, but it has been found increasingly difficult to keep him out of the free beds. Every bed so occupied keeps out a worthy applicant and is being paid for by funds never intended for that purpose.

The medical profession now tardily awakes to the gravity of the situation and is making concerted efforts to find a remedy. It should be encouraged and supported by all right-thinking people. Public opinion is being aroused. The taxpayer is becoming interested. But the true sufferers are the worthy poor, who are being cheated out of the facilities and relief which have been provided by a humane public.



## TUBERCULOUS PULMONARY CAVITIES

By EDGAR MAYLER, M.D.  
Saranac Lake, N. Y.

Read before the Section on Medicine at the Annual Meeting of the Medical Society of the State of New York at New York City April 4, 1933

The depressing statistics on the outlook of cavities in the tuberculous that have been reported in the past stimulated our own studies along these lines. Many workers have reported that the majority of such patients have died within five years.

On closer analysis it has been found that this depressing outlook depended more upon the extent and nature of the surrounding and accompanying pulmonary tuberculosis than upon the cavity itself. Thus the outlook for the far advanced disease has always been recognized as serious regardless of cavity.

On the favorable side, according to our own studies, we are able to emphasize that cavities detected in their earlier period of formation, cavities which have been designated by such terms as "round" or "elastic" or young, have a most favorable outlook with an enforced strict bed rest. Thus of 39 such cavities, 21 have disappeared in five months, and 8 have become much smaller, from their original size of about 3 cm in diameter. Cavities of both young and older formation can disappear in about 40 per cent of the patients on enforced strict bed rest of from one to two years, especially if their closure is not interfered with by the nature or extent of the surrounding disease. About 60 per cent of patients with cavity are still living at the end of five years. The patient with small cavity will survive twice as often as the one with large cavity, about twice as often if the surrounding disease is minimal, than if it is moderately advanced, but seven times as often than if it is far advanced. Our own figures of over 200 cases as well as a much larger series from Trudeau Sanatorium which will be shortly published by Mr. Homer Sampson, and those of Faules and Beaudet, etc., reveal this.

Our own knowledge of the development of cavities emphasizes that the time factor for interfering early should be stressed. These cavities develop rapidly from tuberculous bronchopneumonia, especially in the region below the clavicle, although they may be seen anywhere. The stages of development from infiltration to caseation with final sloughing, the development from the young cavity to the old rigid type can be easily recognized. There are indeed other forms developing as

multilobular formations in dense areas of caseous pneumonia bronchiectatic cavities, and those with narrow anteroposterior diameters, which should be recognized.

It is not the cavity itself that decides the outlook so much as many related factors. These include the age size and number of cavities, their location in relation to the center or the periphery of the lung, their positions in the upper or lower lobe, especially as concerns their drainage and their proximity to the pleura, both parietal and interlobar. Small cavities are more prone to heal. Cavities in the aged are consistent with longer life than those in the young. Central cavities are more liable to heal by concentric contraction, while the peripheral cavities are likely to form pleural adhesions early and should therefore be collapsed sooner.

Brandlike and fingerlike pleural adhesions are found much more often in the upper lobe region, to the extent of almost 90 per cent, especially dorsolaterally. Almost 40 per cent are found between the second and fourth rib and around the midaxillary line. Not many less are found in the same region but nearer the spine. They are commonly found along the slant of the interlobar fissure in the upper lobe region.

Most cavities are also found in that region, from 60 to 70 per cent being in the region of the subapical bronchus and apical bronchus. About 90 per cent of the cavities are located dorsally. If nearer to the base, then the cavity is more likely to be found toward the anterior part of the lung.

The aims of treatment should be to close cavities and to obtain negative sputum. Persisting cavities constantly secreting tubercle bacilli are very likely to induce hemorrhage or spread disease by aspiration and extension or induce amyloid disease.

The aim of treatment of cavities by measures of interference should be to appose the walls, perhaps close the draining bronchus, enforce pulmonary rest and relieve pull on cavity, if not to directly compress it. Most of this depends upon the surrounding disease rather than upon the cavity. Treatment of the young cavities should aim if possible at prevention of pleural adhesions and forestall formation of rigid cavity. Sometimes dense surrounding disease is often the factor in interference with closure of the cavity by

such attempted measures as pneumothorax or operations on the phrenic nerve.

Cavities heal often by apposition with formation of dense pleural thickening or they repair by fibrosis, shrinkage, and obstruction, which may be aided by atelectasis. More rarely do they heal by encystment and calcification.

In treatment of early cavity, especially beneath the clavicle, serial x-ray and careful clinical watching is most essential during the first few weeks. With evidence of increas-

ing disease or enlargement of cavity, immediate collapse is indicated.

Operation on the phrenic nerve will, as a rule, close completely only the young cavities with little surrounding disease. The older cavities with more disease are usually diminished in size but rarely close by this measure.

The more radical therapy such as thoracoplastics, pneumolyses, etc., is indicated, for older cavities with more extensive disease, generally adherent, especially so with giant cavities of the upper lobe.

## SOFT-TISSUE RADIOGRAPHY

By JOHN R. CARTY, M.D.

*Radiologist to the New York Hospital, New York, N. Y.*

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, April 5, 1933.

The average radiographic study of an extremity usually consists of an adequate investigation of bone detail, the roentgenologist often contenting himself with a bare outline of the soft tissues. In most instances the soft-part anatomy is given little consideration. Studies are rarely made, for example, to show the extent and nature of nonosseous tumors. Roentgenography of the soft tissues is an interesting type of work which greatly enlarges the scope and value of an x-ray examination. It deserves more attention on the part of the roentgenologist. The slight extra effort required should not be an excuse for overlooking its possibilities.

For various reasons, such as slight technical difficulties and lack of appreciation, we as roentgenologists have neglected this field. For a satisfactory study one must not be content with bare outline but should demand the same detail within these structures as is required of bones. A thorough knowledge of the anatomy of the soft parts, particularly their relation to the osseous structures, is required for the best results.

We will discuss briefly what can be expected from an adequate x-ray study of the soft tissues: Visualization of normal arteries and veins, particularly at the flexures, can be obtained. Deep varicose veins, especially those in the lower extremities, can be demonstrated. This is a diagnostic aid particularly if there is no evidence of superficial involvement. It may determine whether the injection treatment should be given. Early calcification in the arteries becomes apparent with

the proper technic, usually sooner than heretofore. About the knee, the popliteal nerve and its branches can often be shown. In a recent gunshot case we were able to demonstrate several buckshot in close relation to the external popliteal nerve, thus materially aiding the surgeon. The presence and extent of blood vessel tumors can often be well shown. They have a characteristic, mottled, worm-like appearance. It is sometimes possible to say whether or not the tumor has broken through a capsule, if present.

The extent and nature of tumor masses involving the muscle can also be demonstrated. Early calcification in hemorrhagic exudate becomes visible. Extravasation of body fluids or blood in the muscles gives rise to a smooth obliteration of muscle detail, which permits recognition of this condition. If circumstances are favorable, a ruptured muscle may sometimes be seen.

Subcutaneous structures offer an excellent field for soft tissue investigation. In cases of suspected elephantiasis, considerable information can be obtained.

While necessarily the solid-bone detail is not satisfactory, various early periosteal changes are well shown. Similarly this method forms an excellent means to study the growth of callus. The same principles can be applied to abdominal work with equally good results. Gallbladder shadows, even though containing a relatively small amount of dye, are made denser and more distinct. Kidney outlines become sharper. Liver and spleen outlines are very distinct, thus minimizing the necessity for possibly hazardous methods which utilize intravenous injection

of radioactive materials. Encapsulated abdominal masses appear quite distinct. Fetal structures become visible earlier during pregnancy. In women before menopause the uterus and bladder can often be outlined, tumors and displacements shown. In this, as in all abdominal work, extra care must be taken in the preparation of the intestines. Gas and intestinal contents will obscure the various organs, even with the most careful technic. The bladder preferably should be empty before radiography.

In the chest there is marked improvement in the delineation of heart and lung structures, provided there is sufficient milliamperage available to make the exposure rapidly.

There are several vital factors in the technic which should be considered; perhaps the most important being the relation between the number of milliamperes-seconds and the K.V.P. voltage used. Warren has stressed the necessity for a high milliamperes-second ratio and as low a voltage as is consistent with adequate penetration of the part. In our experience with the present x-ray tube limitation, 250 to 300 milliamperes-seconds is most satisfactory to use for abdominal and extremity work. By this simple expedient alone the diagnostic value of the radiograph greatly increased. This is due, in a large part, to the increased contrast caused by the lowering of the voltage. In addition to the sparkle of the lower voltage radiograph there is an actual increase in sharpness of outline, entirely independent of motion. This factor is very important in the final result and is often overlooked.

In order to bring soft tissue radiography within a practical realm the machine must have good regulation; otherwise it is difficult to duplicate results. It is imperative that the autotransformer should not have steps larger than 2.5 K.V.P. A steady line is necessary as fluctuation will cause irregular results. While the high milliamperes-second ratio introduces an element of danger to the skin, due care will avoid trouble. Until the technic is established, trial exposures are advisable.

The x-ray tube should have as small a focal spot as is consistent with keeping the time of exposure within reasonable bounds and not

overloading the tube. This adds to the wealth of detail and permits of visualization the fine, delicate fascial planes in the subcutaneous structures.

The film employed must have a clean base and be as free as possible from inherent fog. A contrast emulsion gives the best results. Practically all of the film manufacturers are now striving to make this type of film. Development should be by the sight method. This requires some experience. The time and temperature technic is not at all suited for this work, which should be treated as a specialty. At the New York Hospital a separate, small darkroom has been installed to take care of this class of radiography. We have thus been able to do consistent soft tissue radiography in a large department. Fog of any kind is ruinous to results. Care should be exercised in the process of developing so that chemical fog is not formed. Double screens may be employed, although single ones give better results due to the lack of absorption of the extremely soft radiation by the screen.

If it is desired to obtain both bone detail and soft tissues at the same time, card board holders are used. The combination film, however, sacrifices some soft tissues and bone quality. If film holders are used they should be well hacked with lead to prevent secondary fogging.

The technic is extremely selective. As stated before, it is sometimes necessary to make a test exposure with a small film. If it is desired to visualize vessels, slightly higher penetration will be necessary in muscular individuals than if the subcutaneous region or muscles are under investigation. Exposures in various positions may be necessary to avoid overlapping of bone detail. Too extensive an area should not be attempted on one exposure because of the exact penetration needed for a given part.

#### CONCLUSION

Soft-tissue radiography offers a valuable field of investigation for the roentgenologist, greatly increasing his scope of diagnosis. The various conditions suitable for soft-tissue studies are discussed. Essential points of technic are emphasized. A plea is made for more interest in this field.

1300 YORK AVE.

*Dr. Wynne Accepts Position with Milk Institute.*—Dr. Shirley W. Wynne, formerly health commissioner, has accepted the presidency of the Greater New York-New Jersey Milk Institute, an organization of milk dealers in the metropolitan area, according to the

*New York Times.* Dr. Wynne's duties will be largely educational among producers, dealers, and consumers, and he will represent the institute at hearings of the State Milk Control Board. The announcement stated that Dr. Wynne will also engage in medical practice.

# THE RELATION OF UPPER RESPIRATORY INFECTION TO NUTRITION IN INFANTS AND CHILDREN

By MARSHALL CARLETON PEASE, M. D.

*From The Service of the Babies Wards  
New York Post Graduate Medical School and Hospital,  
New York, N. Y.*

Read before the Pediatric Section at the annual meeting of the Medical Society of the State of New York, April 4, 1933.

In considering the relation of infections to nutrition in infants and young children I realize that I am taking up a controversial subject. However, it is possible to arrive on nearly common grounds if it is accepted at the start that not all infants and young children who are suffering from nutritional disturbances are suffering from a focus of infection. Three basic factors explain much of the present infant mortality rate: the first is improper feeding, the second is true enteric infection restricted to the gastro-intestinal tract, and the third is a parental infection characterized by a focus outside of the gastro-intestinal tract.

The first two of these factors are well understood and are on the whole adequately cared for. As to the third point, all physicians accept the clinical association between parental infection and intestinal disturbance, though many have not accepted the hypothesis that a large number of cases of gastro-enteritis are caused by middle-ear or sinus infections. This last proposition has, however, been ably supported by numerous pediatricians and otolaryngologists<sup>1-5</sup>. Paranasal sinusitis has been shown to be of considerable frequency in children<sup>5-10</sup>. It is my own conviction that it is difficult to exaggerate the importance of these infections from the standpoint of either immediate or remote effects, and that they may be the underlying cause of such divergent groups of symptoms as characterize gastro-enteritis, bronchopneumonia, and nephrosis.

There are obvious infections in children which are not compatible with life or good health and which are nevertheless so chronic in their progress that striking changes in nutrition take place. Conditions of this nature may occasionally clear up, leaving behind a permanently damaged individual in so far as nutrition and growth are concerned.

There is another less easily recognized group of cases which are classified as upper respiratory infection. Apparently we must revise our conceptions of what an acute cold is. An acute cold involves not only the nasal and nasopharyngeal mucosa but the lining mem-

brane of the sinuses as well. The duration and the number of attacks an individual must have before there is evidence of a chronic change in the membranous lining of the sinus itself or in the bone depends upon individual variation, which in turn may depend upon age, susceptibility, and virulence of infection.

Almost any of the pathogenic organisms are found in these cases of parental infections and sometimes several of them are associated, but the streptococcus group is the one most frequently isolated.

Age is of some importance. In a study of our cases almost half the deaths in the entire group occurred during the first five months, and one-fourth of them in the first two months. This is partly explained on the ground that the very young have not yet developed the immunity which they will have to disease at a later period in life and that many of the disturbances which are so severe in these early months are in reality a part of the process of developing immunity. Certainly, they rarely suffer from a septicemia, and older children may survive a serious and prolonged upper respiratory infection without loss in weight or physical discomfort. As children grow older, profound disturbances of nutrition tend to become less noticeable and the complaints are more generalized, such as nasal discharge, epistaxis, repeated colds, cervical adenitis, occult and recurring fever, irritability, lack of progress in school, depression, loss of memory, and hypersensitiveness.

The suggestion that enteritis in children is due to an inflammatory process in the middle ear and mastoid alone is incorrect. Thereby we do not mean to state that absorption may not take place from the ear and mastoid, but we have proven, at least to our own satisfaction, that the primary infection in the majority of cases is in the nasal passage and sinuses.

The nose, throat, and ears of a one-half-month-old baby are difficult to see clearly. A slight reddening of the throat is often partially concealed by a thin gray membrane. The mucosa lining the nose in the earlier stages of a cold is swollen, red, and dry, and it may be two or three days or longer before a running nose develops; and even then the dis-

charge may be entirely postnasal. The nearly normal appearing ear drum has a significance which is not infrequently overlooked by the otologist and pediatrician. It is not widely appreciated that the ear drum may appear nearly normal, though with an acute mastoiditis behind it, the history is not negative if carefully taken. In a study of our cases operated for a diseased mastoid the drum appeared normal once or twice in 73 operations. We are of the opinion that a practically normal drum will cover a diseased mastoid about once in eighty times. Therefore we consider that an *exploratory* mastoid operation is a well-studied and considered case is a justified measure. As an example of such a justification of an exploratory operation was the child admitted to the wards as a meningitis which was later changed to a diagnosis of a possible brain abscess. There was a history of otitis media but at the time of operation the evidence was so slight that the ear was generally considered as presenting all the external evidence of a normal ear. The operation revealed badly diseased mastoid cells and a localized pachymeningitis. This child after being considered to be a hopeless case, made a good recovery.

Two hundred and four histories have been taken from the files of the Babies Ward at the New York Post Graduate Medical School and Hospital. They included a variety of diagnosis as will be seen from the following list:

Bilateral purulent otitis media ..	18	Vomiting .....	1
Unilateral .....	5	Endocarditis ..	1
Mastoiditis .....	8	Scoury .....	1
Bronchopneumonia	18	Eczema .....	1
Malnutrition ...	14	Secondary anemia	1
Acidosis .....	13	Convulsion .....	1
Dehydration ...	19	Meningism .....	1
Diarrhea .....	13	Pyloric stenosis ..	1
Acute gastro-en- teritis .....	5	Pneumonia .....	1
Bronchitis .....	3	Meningitis .....	1
Marasmus .....	3	Pyelitis .....	1
Rickets .....	2	Brain abscess ...	1
Cleft palate ....	2	Cerebral hemor- rhage .....	1
Feeding case ....	2	Adenitis .....	1
Terminal strepto- coccus menin- gitis .....	2	Congenital atonic colon .....	1
Septicemia .....	1	Hernia .....	1
		Celiac disease ...	1

All deaths were included in the group in the four-year period studied, unless they were obviously the result of some condition having no possible relation to upper respiratory infections, such as death following an appendix

operation. There has been little conscious selection of cases further than to rule out the purely surgical case even including those that came in with a diagnosis of mastoiditis and those medical cases in which there was a definite clear-cut picture of a medical condition which at best could have only a remote relationship to the upper respiratory tract. Acidosis, dehydration, vomiting, malnutrition, and bronchopneumonia were all included. A majority of the cases in which there was no satisfactory examination of the ears occurred in babies under one month of age or who came into the hospital in extremis.

Of the children, 42.6 per cent were under seven months of age. In this group there were twice the number of deaths and one-third the number of operations on the ears that are found in the larger group (57.8 per cent). The ages of the children ranged from two weeks to six and one-half years. In the younger age group, in many instances of which weight was taken daily, there were no gains in weight and often a moderate to severe loss with the onset of an upper respiratory infection. A red throat, or the appearance of congestion and edema in the mucous membrane of the nose, or the reddening of an ear, was invariably a sufficient reason for changing a good feeding history into a perfectly bad one. Of the 31 deaths in this series certainly having upper respiratory infection, 9 were operated on for mastoiditis, 3 within twenty-four hours of death. A similar operation was discussed in 11 of the remaining 22 cases and was delayed for various inadequate reasons.

It is my experience that operation is frequently delayed beyond the period of safety and I am convinced that the death rate in the cases mentioned in the foregoing could have been reduced considerably by immediate surgery, even though it be of an exploratory nature.

In an examination of 100 records from my private files I find that an upper respiratory infection always meant a stationary weight or a loss in weight, and that nearly all the deaths for a number of years in private practice have had their inception in a cold in the head.

Not infrequently the first evidence of improvement in the local condition was in the increasing interest in the food, a stopping of the regurgitation, an improvement in the condition of the bowels, and a gain in weight. This did not always mean a permanent recovery, though on not a few occasions it led to the postponement of an operation which might better have been done earlier.

There seems to be no reason why one should

operate routinely on a mastoid antrum for gastro-enteritis. Dehydration, acidosis, malnutrition, or bad feeding history are hardly indications for such interference. All these conditions I am convinced are frequently produced by an infection of the upper respiratory tract which includes the mastoid cells. Where this occurs, the ultimate prospect of recovery is improved if some method can be found to relieve the local condition. In so far as the ears are concerned myringotomy should be done at the first evidence of trouble in the ears in all small infants and feeding cases. A myringotomy, however, is usually insufficient and if the child continues a stationary weight or is losing weight and is beginning to show evidence of dehydration, a mastoid antrotomy should be considered.

There should be a closer cooperation between the otolaryngologist and the pediatrician. They should meet at the bedside of these cases and exchange opinions. In the end the pediatrician should decide when the time is opportune for operation. It is to be admitted that this sometimes requires courage, especially when the operation must be in the nature of an exploratory one. So far as I know we have not opened a normal mastoid in an infant or child. On the other hand, we have seen a number of autopsies at which undiagnosed mastoids were discovered.

When it comes to the nasopharynx, it must be confessed that the method of procedure is less clear. It is, of course, recognized that the tonsils and adenoids must on occasions be removed at an early age, but few of us have the courage to suggest such a procedure under the twentieth month and would prefer to wait longer. The maxillary and ethmoid sinuses are anatomically of interest at birth; and the sphenoidal and frontal sinuses at the sixth to the tenth year. It is more difficult to collect evidence of disturbance in nutrition in the very young as the result of purely nasopharyngeal infection, though it is usually recognized that a head cold is sufficient to stop a gain in weight which is not to be entirely explained by a loss of appetite. In older children such evidence is more easily found and all of us can probably remember a phenomenal growth and gain in weight after the removal of tonsils and adenoids; or the complete change in the outlook of a child in which an infected antrum was successfully treated. In our own experience x-ray pictures have not been very satisfactory in helping in the diagnosis of sinus infection or even of operable mastoids. Sinus infections are usually not as obvious as those infections occurring in the ear and produce their effects more slowly and are longer drawn out than is the case

with middle-ear disease. In both instances the more serious symptoms of malnutrition, dehydration, and acidosis are usually preceded by a period of a little fever and a stationary, or loss of, weight. The upper respiratory infection is rarely obvious while the gastro-intestinal symptoms and loss of weight are apt to be prominent. The only explanation for this disproportion between the focus and the general effect that I can offer is that it lies in the direction of a clinical change in the capacity of the infant or child to react to an infection or intoxication, following a primary infection; and it may be in the direction of immunity or of increased susceptibility. It is associated with anaphylaxis and is that form of immunity which in a general way is described as bacterial allergy. It often follows the absorption of bacterial protein from a focus of infection. It is quite certain that these children rarely have a septicemia or bacteremia; and it does not seem reasonable to suppose that their symptoms follow the swallowing of secretion from the nasopharynx or even are the result of a secondary infection of the gastro-intestinal tract.

The treatment does not depend upon changing the babies' formula but does quite naturally divide itself into preventive and immediate treatment. I have seen children with evidences of sinus infection whose parents and nurses were free of the disease, but I have yet to find the child whose parents or nurse had an active chronic upper respiratory infection who was entirely free of a similar infection. It is fairly well understood that colds are contagious, but there is still too little effort made to protect small children and infants from this contagion. It is also for this reason that home is generally speaking a safer place for babies than a hospital with its numerous opportunities for contact. Fresh air, controlled sunlight, and a properly balanced diet are all good preventive measures. It is as bad technic to remove tonsils and adenoids too late as it is to remove them too early and if the child continues to have many colds after the operation it is certain that the operation has been too late to prevent the infection of the sinuses. Cod liver oil is, as a rule, useful in increasing the resistance against upper respiratory infections and particularly those cod liver oils which are high in vitamin A. The concentrated oils which are obtained from halibut and salmon are usually of help in children which do not bear fats well or in which for any reason it is desirable to give a large dose without increasing the fat intake. Carotene, which is primary vitamin A of vegetable origin, makes it possible to greatly increase the vitamin A ef-

iciency of any fish oil which contains a reasonable amount of secondary vitamin A. So far as is known there are no ill effects from overdosage with vitamin A, so that it is proper to push the quantity well above what is perhaps needed. A deficiency of vitamin A, in animals at least, results in 100 per cent of upper respiratory infections so that it would seem wise to insure that every prospective mother, infant and small child should be insured against such a deficiency. I am personally convinced that the Alpine light properly controlled is of considerable value in raising the resistance of the individual against colds. Proper ventilation and the maintenance of an even temperature are of great importance.

The immediate treatment of an upper respiratory infection is of importance. Suction and remedies which are astringent to the mucous membrane of the nasopharynx seems to be about as far as we may venture in small infants. In older children the washing out of the antrum may be useful. I must admit that we have avoided operative procedure about the nose in small infants and still find unsurmountable difficulties in diagnosis. However, a recognition of a situation as it exists is important in a study of the group. In the ears there is a somewhat different situation. An infant showing signs of nutritional disturbance should have his ears opened on suspicion; and a mastoid autotomy should be performed before he has reached a desperate pass.

The following statements are submitted for consideration:

1. Upper respiratory infections are a common cause of nutritional disturbances in children; in infants they may result in general symptoms, such as diarrhea, vomiting, dehydration, and acidosis.
2. The primary source of the infection is in the nasopharynx from which it may spread into all the sinuses including the middle ear.
3. Pathological processes may, and do, occasionally exist in the mastoid antra and in the sinuses with few or no diagnostic signs.

4. Roentgenograms when properly made and interpreted are sometimes useful. In small children, however, they should never be relied upon for a final diagnosis.

5. Mastoid autotomy effects in a certain number of instances a cure of an apparently hopeless case. It should always be remembered that the operation is performed for a diseased mastoid (or sinus) and not for a gastro-enteritis. An exploratory mastoid autotomy should be performed with less hesitancy than is at present the case. It is granted that in unscrupulous hands it would be radicalism at its worst.

6. Operation should not be delayed in cases where a diagnosis of operable mastoid is made.

7. We believe that the other sinuses are as important as the mastoid in producing nutritional disturbances but have to grant that the methods of diagnosis and treatment at the present moment are far from satisfactory.

8. The concentrated fish liver oils with our present means of increasing the vitamin A efficiency probably offer an immediate preventive measure of real importance.

I wish to thank Dr. Marvin Jones for helpful suggestions and his ready cooperation both in the wards and in his illuminating discussions of this whole matter in its relation to the well-being of children

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155 EAST 62ND ST

*A Radio Drive Against Quacks.*—The Philadelphia County Medical Society, we are informed, has engaged Dr. Howard W. Haggard, popular author of "Devils, Drugs and Doctors," and "The Lame, the Halt, the Blind," to present a series of radio broadcasts in the interests of the ethical M. D. Members of the County Society are donating subscrip-

tions of \$15 each to pay for the series, and the benefits are expected far to outweigh the expense. The campaign covers thirteen weeks and is directed against quacks and patent medicines. Beside benefiting the profession, it will save the gullible public many thousands of dollars in money and do untold good in preserving their health.

## ACUTE APPENDICITIS

By DENVER M. VICKERS, M.D., F.A.C.S.

*From the Mary McClellan Hospital, Cambridge, N. Y.*

Read at the meeting of the Fourth District Branch of the Medical Society of the State of New York, at Schenectady, October 11, 1932.

Appendicitis is an old story. Every young surgeon thinks he knows how to remove an appendix. Every medical student can recite the signs and symptoms. Every practitioner sees cases frequently. But, by that very token, the short study of a group of cases of acute appendicitis may be of more interest than the report of an isolated case of a rare disease.

In general, the mortality of acute appendicitis during the past few years has been increasing. In the United States Registration area, the deaths per 100,000 due to acute appendicitis<sup>1</sup> in 1900 was 9.7; in 1910, 11.4; in 1920, 13.4; and in 1929, 15.2. Analysis of a series of deaths by the Metropolitan Life Insurance Company<sup>2</sup> showed acute appendicitis second only to cancer as a cause of death in surgical disease. It is estimated that throughout the country, about 25,000 persons die annually from acute appendicitis or its complications.

To give a practical idea of this death rate, the mortality in New York City from measles, scarlet fever, diphtheria, whooping cough, all together, is 16.18, or practically the same as that of acute appendicitis; that from auto accidents is 17.25, and diabetes 23.54.

It is recorded<sup>3</sup> that the European rates are much lower; the combined average being around 5.6. The reasons for this lower figure have not been explained. Whether the methods of compiling the figures are comparable or not, I do not know. In the literature, their methods of treating appendicitis do not seem to vary essentially from our own, and I see no reason for any great variation in results.

Therefore, these 320 consecutive cases of acute appendicitis were taken from our own files. These are all cases I have seen personally, and have been operated on by Dr. Fortune, my colleague, or myself. They are all acute, clinically, pathologically or both. Let us then tabulate these and see where we stand.

Chronic appendicitis is another question. What its diagnostic criteria are, whether or not there is such a disease, what the chances are of its cure, that is not the present story. I have excluded all such cases from this series.

In acute appendicitis I offer no new or startling methods of diagnosis or cure. We use standard technic throughout. Our methods are those I have seen used in many other clinics and hospitals. I believe there is no royal road to success, but in the difficult case there is no disease that calls for more accurate judgment, more balanced technic, and more careful postoperative care.

In the diagnosis of this disease there are definitely two classes of cases: First, the textbook type of case, with the definite progression of symptoms, and characteristic physical signs. These occupy perhaps 50 per cent of the cases. Second, the atypical cases, that may severely tax your diagnostic ability, making another 50 per cent. These may begin with right-sided pain, or no pain at all; they may have vomiting early or late or not at all, and give nothing like the textbook history and physical examination.

It is well, too, to bear in mind that appendicitis may be pathologically of two types; the acute inflammation of the wall of the organ, a relatively harmless disease, or a sudden obstruction of the lumen, which may be rapidly fatal.

The first gives rise in pulse and temperature, vomiting, aching pain, and local tenderness. The second gives more the picture of acute intestinal obstruction, with sudden onset, spasms of pain, vomiting, but little or no rise in pulse and temperature.

The pathological observation of these two types of cases explains the reasons for the variable results in delayed operating. Clinically it is of minor importance, for I believe we should operate as soon as the diagnosis of acute appendicitis is made, whichever type we suspect. However, it is the clinical study of the pathology of the first few hours in this second group of cases, that will bring results. The diagnosis and removal of an acutely obstructed appendix is still one of the triumphs of modern surgery.

Let us take, then, our series of 320 unselected cases and see who has appendicitis.

In this series, we find 186 male and 134 female patients; that is, 58 per cent male and 42 per cent female, which is about the usual reported ratio (Chart 1).

The chart for the age distribution (Chart 2) explains itself. We see that the maximum incidence is between 15 and 20 years. The youngest case in this series was 17 months



and the oldest 75 years. Since we started this tabulation we have had one case in a man aged 86, with good recovery. Thus appendicitis may be found at almost any age, but is more common in adolescence and in adults.

The general mortality in our whole series was 5.43 per cent.

Boland<sup>1</sup> from Georgia, at the Section on Surgery at the A.M.A. Convention in 1932, tabulated 4,270 cases operated on by 197

of unoperated appendicitis I could find, is in the Georgia statistics<sup>1</sup>, which shows 46 not operated; half refused operation and half were treated, with 5 known deaths, a mortality of 11 per cent.

Of the others in our own series, we operated on 193 cases, in which it did not seem necessary to drain the peritoneum or in which an abscess had not formed. Of these, none died; that is, there was a mortality of 0 per cent. Of course, if we keep on operating

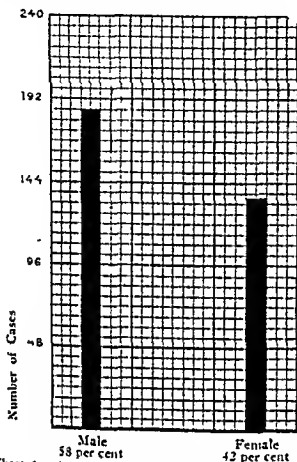


Chart 1—Acute Appendicitis and Sex Distribution

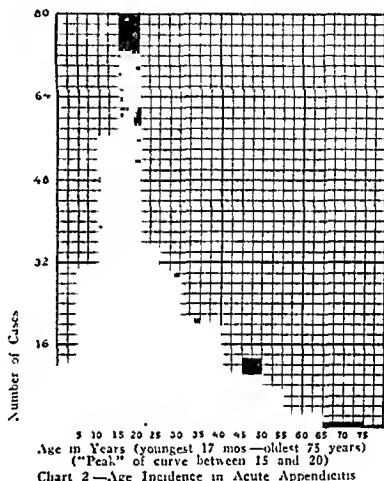


Chart 2—Age Incidence in Acute Appendicitis

surgeons and found a mortality of 4.4 per cent. Weeden<sup>4</sup> in New York reported 1,588 cases with a mortality of 4.9 per cent. Black<sup>5</sup> before the Western Surgical Association found a mortality of 4.88 per cent in 83,000 cases. Tasher<sup>6</sup> reported 361 acute cases with a mortality of 6.4 per cent. McKinty<sup>7</sup> in Winnipeg studied 17,916 British and American cases and came to the conclusion that the average mortality is around 6 per cent, and that a large percentage of the deaths must be charged to diffuse peritonitis. So these figures agree fairly well.

Now, let us look at the mortality and the type of procedure necessary (Chart 3).

In this series there were 7 unoperated cases. Let it be understood that we believe that once the diagnosis of acute appendicitis is made, operation should be advised, but in this series there were 7 cases that either refused operation, or were in too poor condition for operation, or for some other reason were not operated on. Of these, 2 died (28 per cent).

The only other tabulation of the mortality

long enough sooner or later we will run into some of the accidents of surgery, which will give a small mortality, but so far, the record is clear. Appendectomy is not yet strictly comparable to having a haircut.

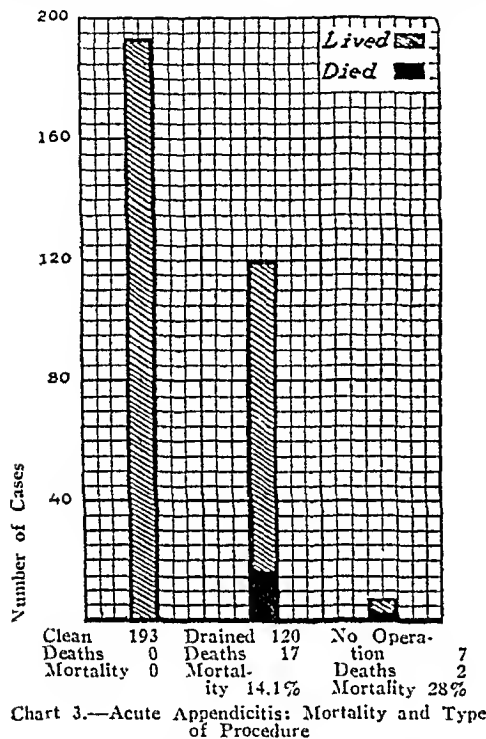
Of the others, in 120 it was necessary to drain. In these, there were 17 deaths, or a mortality of 14.1 per cent. This mortality is apparently greater in recent years, for conversely, we have been draining fewer and fewer cases. Or at least, after the appendix has been removed, if the peritoneum is not grossly contaminated, we close the peritoneum, and at times leave the fascia open for secondary suture or granulation. This procedure saves the patient time in the hospital, saves fascia with stronger repair, and clinically is very satisfactory.

Some of the acutely ill patients in this group had merely drainage of the peritoneum, without removal of the appendix. No great degree of time or trauma to the intestines should be used to find an appendix in the presence of a spreading peritonitis. If the

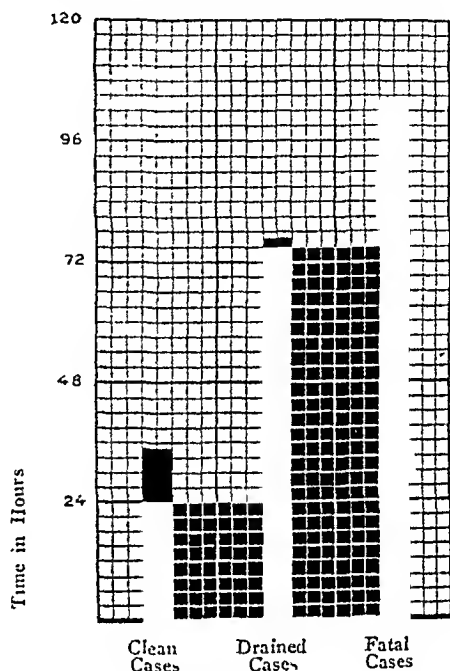
organ is not readily demonstrated, drainage only is done.

Theoretically, in the recovered cases of this type, we should reoperate later to remove the appendix, but in all our cases of this class, we have had no recurrence of symptoms. In the drainage cases, most of the cultures showed *B. coli*. The streptococcus gave a distinctly poor prognosis.

We believe, though, that the appendix should be removed at the primary operation



If the appendix can be easily found and removed, we sew up those cases of slight or beginning peritonitis, knowing that the peritoneum can take care of considerable infection. But if the appendix was not removed, or if the amount of septic fluid is at all large, we leave cigaret drains well down in the peritoneal cavity, to be gradually removed. Stiff rubber tubes or bare gauze should not be used as they further traumatize the intestines. The clean cases are obviously completely sutured.



if the peritoneal reaction is not too great. To remove an acutely inflamed, friable appendix through a small incision, without traumatizing the rest of the peritoneum or bowel, is a technical trick well worth study and practice. The ligating of a mesoappendix deep in the wound, with imperfect visualization is difficult for the surgeon, but best for the patient, avoiding traction on potentially infected vessels and lymphatics.

I hold no brief for any one incision. With careful examination, one may get a hint as to whether the organ is pelvic or far to the right. In males, the muscle-splitting McBurney incision usually gives good access to the appendix, if it is in the usual location, though allowing little chance for exploration, which should not be done anyway if the diagnosis is correct. In females, the difficulty of differential diagnosis may mean more frequent right rectus, or even midline incisions, though if the case is septic this means dragging infected matter across an uninfected peritoneum.

For anesthesia, we have used ether, local and spinal. Ether is still the old reliable, though I believe many postoperative herniae start in the straining after ether. Nitrous oxide is of value at times. Spinal anesthesia theoretically induces greater peristalsis, though it makes exploration easy by relaxing the abdominal wall. Local anesthesia, though slow, is of great value in the more critically ill patients, and with care, the whole operation can be done satisfactorily. Recently we have used sodium amylal to give a "basal" anesthesia in those patients who can retain it.

Promptness in operating has been talked about for years. Let us see how important this is (Chart 4). In this series, the average duration of symptoms in the clean cases, before operation, was 34.3 hours. These varied, of course, rather widely, I suppose, as to whether the disease was obstructive or straight inflammatory, but the figure is the average.

Of the drained cases, the average duration of symptoms preoperative was 76 hours.

And in the fatal cases, the average time was 103.4 hours, a higher figure than the other two. The conclusion is obvious.

Bower<sup>8</sup>, of Philadelphia, in recognizing this factor, said that in surgery of the appendix, so far as mortality is concerned, we have reached about the same stage as in carcinoma of the breast. From a technical standpoint, little more can be done, but a great deal has been done by publicity.

We take the admission temperature by rec-

derful for some things but terrible for appendicitis. Bower holds cathartics responsible for 92 per cent of the deaths in his series. This matter was commented upon editorially in the *Journal of the A. M. A.*<sup>9</sup> not long ago, stating that in a great majority of all severe cases, including practically all who had early and hopeless peritonitis, a cathartic had been given soon after the onset of the disease. Certainly we cannot hope to reduce the mortality of acute appendicitis till the public in gen-

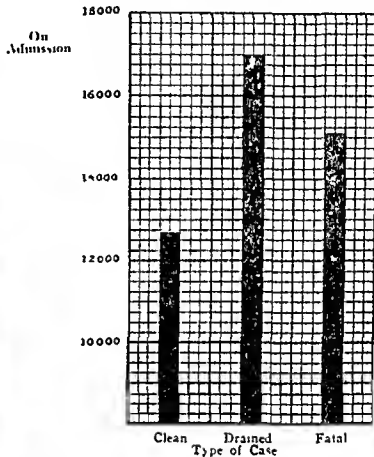
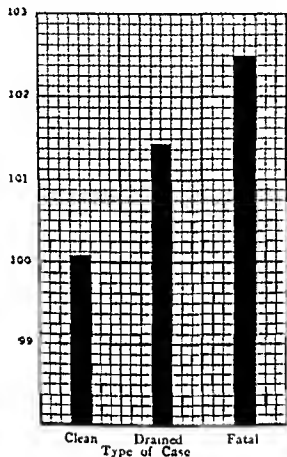


Chart 5.—Acute Appendicitis. Temperature and Leukocyte Counts

tum (Chart 5). The average temperatures of these three groups are as follows: in the clean cases, the admission temperature was 100.1; in the drained cases, the average temperature was slightly higher at 101.4; and in the fatal cases, the temperature was 102.5.

In the case of the total leukocyte counts, the figures do not increase so smoothly. The figure for the average clean case is 12,700. For the average drained case, it is 17,250. And for the average fatal case, 15,100.

In other words, the average case of acute appendicitis has very little rise in temperature until the disease spreads to the peritoneum. By the figures, a temperature by rectum of over 101, gives better than even odds that the appendix is ruptured. And in the more critically ill patients, a white count below 15,000 is of poor prognostic value.

Of our fatal cases, and drained cases, a large percentage had cathartics. Appendicitis is obviously frequent in the youngsters, who are apt to come under the care of maternal castor oil. Castor oil is certainly won-

derful for some things but terrible for appendicitis. Bower holds cathartics responsible for 92 per cent of the deaths in his series. This matter was commented upon editorially in the *Journal of the A. M. A.*<sup>9</sup> not long ago, stating that in a great majority of all severe cases, including practically all who had early and hopeless peritonitis, a cathartic had been given soon after the onset of the disease. Certainly we cannot hope to reduce the mortality of acute appendicitis till the public in gen-

#### SUMMARY

1. Acute appendicitis in our series is largely a disease of young and young adult life.
2. There is an average mortality of from 4 to 6 per cent. This mortality often follows the taking of vigorous cathartics.
3. The mortality is directly proportional to the length of time elapsing between the time the patient is taken ill and the time he is operated on.
4. Operation for appendicitis before the disease has spread beyond the appendix is accompanied by very slight risk.

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## THE EXPLOITATION OF VITAMIN A

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Read before the Section on Pediatrics at the annual meeting of the Medical Society of the State of New York, New York, N. Y., April 5, 1933.

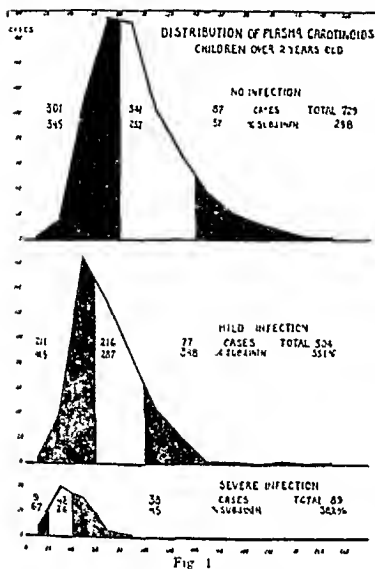
Vitamin deficiencies in animals may lead to decreased resistance to infection. This is especially true of vitamin A. This fact has led to the belief that susceptibility to infections in human beings may be due to use of food which lacks adequate amounts of vitamins, even though other evidence of vitamin deficiency is not apparent clinically. A condition of partial or latent deficiency is then said to exist. If the administration of vitamins to a group of individuals should lead to a striking lowering in the incidence of respiratory infection, this thesis would be established. Different investigators, however, have reached diametrically opposite conclusions. For example, Mellanby<sup>1</sup> does not hesitate to term vitamin A "the antiinfective vitamin"; Sawyer<sup>2</sup> by administering cod liver oil to industrial workers is able to reduce the incidence of colds from 55 per cent in a control group to 32 per cent. On the other hand, Lewis and Barenberg<sup>3</sup> show that in a group of infants in the hospital, cod liver oil does not lessen the number or severity of respiratory infections; and Sutliff<sup>4</sup> shows that cod liver oil will not prevent otitis media as a complication of scarlet fever. In order to reconcile these conflictive observations, it is necessary to assume a latent deficiency in cases where benefit has followed the use of vitamin A. Although the assumption of a latent deficiency might be justified, it could be more definitely established if evidence of a direct sort could be secured. In the present communication, evidence of this kind is presented. At the present time, some criterion of latent deficiency of vitamin A is needed, because various preparations of the concentrated vitamin A and of its precursor, carotene, have appeared on the market. The claims made for these preparations by the manufacturers are naturally based upon the favorable clinical reports, whereas adverse reports are ignored.

We have based our studies upon the carotinoid pigment of the blood plasma, as determined by the method of Connor<sup>5</sup>. These studies were made because carotene is the precursor of vitamin A. We have shown that carotinoids appear in the blood after the ingestion of pigmented vegetables or of carotene in oil; that they disappear gradually when such materials are omitted from the diet; and more rapidly during an infection. In any given person, the level tends to remain rather

fixed during health; but the levels in different persons vary widely. We are well aware that what we have determined is a mixture of carotene, xanthophylls, and possibly other carotinoids; whereas carotene alone is to be regarded as the precursor of vitamin A. However, as these pigments in foods are always associated with vitamin A activity, and as a definite regularity appears in our results, we feel some confidence in the method.

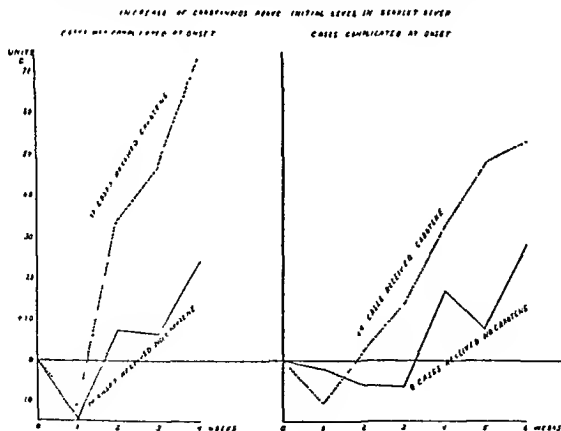
We will present first a study of plasma carotinoids in 1,322 children over two years old (Fig. 1). The levels are given in arbitrary units, each unit being approximately 1 gamma (0.001 mg.) per 100 c.c. The number of cases falling within limits of 20 units is plotted over the midpoint of each interval. In children free of infection when examined, the greatest number of cases fall within 80 to 120 units, but there is a very wide range. In children with mild infection, there is a distinct fall in plasma carotinoids. In those with severe infection, this fall becomes still more marked. Repeated observation of a number of individual cases has shown beyond question that the fall in carotinoids of the plasma does not precede infection, but results from it. This fall is due largely to lessened food intake. The return to the initial level (that preceded the infection) takes place within ten days to two weeks after the temperature becomes normal. The lowering of plasma carotinoids during infection, therefore, cannot be used to argue that insufficient carotene intake predisposes to infection.

The records of all cases here discussed were examined by the author for a history of repeated respiratory infection. The uncertainty of this sort of evidence is acknowledged; but cases were included only when they could be clearly classified as "susceptible" or "not susceptible." The percentage of susceptible children in each group included within the limits of 20 units of carotinoids was calculated. In the healthy children, it was found that the percentage of children susceptible to repeated respiratory infection is higher in those with low plasma carotinoids; and that the susceptibility falls rather suddenly at carotinoid values of 80 units. Above 140 units, the susceptibility to repeated infection again rises. We can thus distinguish three zones: plasma carotinoids below 80 units, 301 children, 34.5 per cent susceptible; 80 to 160 units, 341 children, 23.7 per cent susceptible; over 160 units, 87 children, 37 per cent sus-



ceptible. In the middle zone, 23.7 per cent of the children are susceptible, and this rate of susceptibility does not decrease when the

ceptibility to lack of vitamin A; we are entitled to attribute only the increase in the rate to this factor, that is, 10.8 per cent, the difference between 34.5 and 23.7 per cent. Consequently, 32 children in this zone, and none of the other 729 children, can be assumed to owe their susceptibility to a deficiency of vitamin A. In other words, only 4.5 per cent of the children, healthy when examined, may have a relative deficiency of vitamin A. Similar zones can be distinguished in children with mild and with severe infections. In other words, the lowering of carotinoids due to the infection present at the time of observation, does not obscure the occurrence of the three zones. Calculation shows that in the children with mild infections, 5.4 per cent might owe their repeated infections to low carotinoids; and in the children with severe infections, 4.1 per cent. The correspondence in these figures is probably significant. It means that in the children studied, susceptibility to repeated infection is due to low carotinoids in not more than 5 per cent. If an effort were to be made to improve resistance by administering carotene in some form to half of the group, the other half serving as controls, a statistical analysis would fail to show a significant difference. Nevertheless, a few individuals would be benefited; but by including them among many



carotinoids rise. This may be taken to represent susceptibility which is not due to deficiency of vitamin A. We may reasonably assume that 23.7 per cent of the children in the lowest zone also do not owe their sus-

unbenefited ones, the real effect would be obscured. In these days when the statistical method is being so widely applied to therapeutic studies, we must note this important limitation of its value. Obviously, some

means are required for selecting the group of persons in whom studies are to be made. It is suggested that in studies of the effect of administering carotene, determinations be made of plasma carotinoids.

The significance of increased susceptibility to infection of children with high plasma carotinoids is not clear. By a simple calculation it can be shown that high carotinoids are associated with increase of susceptibility in 1.2 per cent of the healthy children, in 0.9 per cent of those with mild infection, and in 8.1 per cent of those with severe infection. Possibly certain individuals cannot utilize carotene readily. We have observed diabetics who were susceptible to infection while plasma carotinoids were high, as well as a few cases of xanthosis cutis, with marked susceptibility to infection. On the other hand,

in Figs. 2 and 3, no benefit resulted, either in the temperature or in the number of complications. It would, of course, take a much larger series to settle this question. At this time we shall only point out that the administration of carotene caused a definite rise in the plasma carotinoids (Fig. 4). This rise was not apparent in the first week or ten days; nor was it so marked in cases complicated at the onset, or in those who had fever, after the first two weeks after the onset. In this series, we determined also the vitamin A content of the plasma by the Price-Carr method, a correction being made for the effect of carotene upon the reagent. It was shown that the administration of carotene causes a rise in the vitamin A of the plasma. This increase also is apparent only after the first two weeks and is less in those cases with

LEVEL OF VITAMINE A IN PLASMA, AS INFLUENCED BY ORAL ADMINISTRATION OF CAROTENE DURING SCARLET FEVER

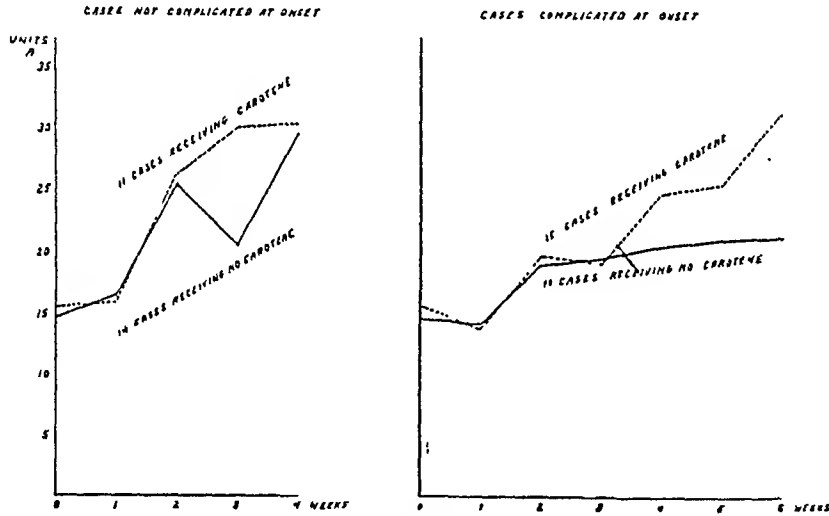


Fig. 3

we have not ascertained the nature of the carotinoids in the cases here presented. In a few others with marked elevation of carotinoids a high xanthophyll level was present.

In those children who were severely infected when examined, the number in the zone of higher carotinoids was +5 per cent of all; whereas in the children with no or mild infections, the high zone included only 10 to 15 per cent of all. Possibly the group of children with severe infections included a large number who were unable to convert their stores of carotene readily into vitamin A. The suggestion is obvious that the administration of additional carotene during an infection may be of no value, either on this account, or because it is not readily absorbed.

Carotene was administered to 63 cases of scarlet fever. Alternate cases received 0.3 mg. per kilogram per day in oil. As shown

continued fever. Five or six days after the fall in temperature, the vitamin A rises above normal; after another six or seven days, it falls to a new low level. There is some indication that administration of carotene may lessen this secondary fall. Whether such an effect would be beneficial we cannot say.

The failure of obvious benefit from administration of carotene during the course of

TABLE I—EFFECT OF ORAL ADMINISTRATION OF CAROTENE DURING SCARLET FEVER UPON TEMPERATURE

		Maximum temperature during week (average) °C.						
		No.	1	2	3	4	5	6 7
Cases not complicated at onset	No carotene	21	39.3	38.1	38.0	38.0	37.7	
	Carotene	13	38.8	37.9	37.9	38.0	37.7	
Cases complicated at onset								
No carotene	13	39.9	39.5	38.7	38.4	38.7	38.9	39.2
	Carotene	16	39.9	39.4	38.7	38.4	38.6	38.4 37.9

scarlet fever may be due to the fact that the number of our cases is small, or that the control groups are not strictly comparable. It is not due to the failure of absorption of the carotene nor to the failure of its conversion to vitamin A. We are inclined to think that the cases studied did not suffer from any

due to faulty absorption. At the present time, several preparations of carotene have appeared on the market, heralded by unwarranted claims. Any value which these preparations may possess will not be apparent unless due caution is used in prescribing them only where actually needed. There is also

TABLE II—EFFECT OF ORAL ADMINISTRATION OF CAROTENE DURING SCARLET FEVER

Cases uncomplicated at onset no carotene, 21 cases		Cases complicated at onset Carotene, 16 cases		No carotene, 13 cases	
	Complications			Initial	After 1 week
1	Otitis .....	0	Initial	8	1
2 (same case)	Mastoiditis .....	0	After 1 week	0	1
1	Adenitis .....	0		0	4
0	Arthritis .....	1		2	1
0	Sinusitis .....	0		2	0
0	Abscess .....	0		1	0
0	Empyema .....	0		1	0
0	Peritonitis .....	0		0	2
2	Other .....	3		0	2
0	Died .....	0			1
43	Av. stay, weeks .....	5.2		69	61

VITAMIN A OF BLOOD IN SCARLET FEVER: EFFECT OF ADMINISTERING CAROTENE

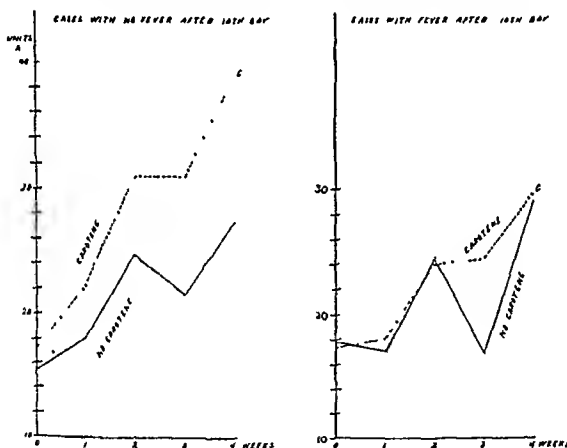


Fig 4

deficiency of vitamin A and that no benefit should have been expected.

**Discussion and Application.**—In a group of children over two years of age, evidence is presented that relative deficiency of vitamin A could have existed in only about 5 per cent. This conclusion is based upon a consideration of the increased susceptibility to infections in the groups with low plasma carotinoids. It is pointed out that confusion in the clinical evaluation of carotene as an anti-infective agent will continue unless some criterion is developed for selecting cases which really suffer from relative deficiency of vitamin A. It is shown that failure to obtain beneficial ef-

fects from administration of carotene is not no reason to believe that carotene in oil is of greater value than carotene in vegetables.

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# NEW YORK STATE JOURNAL OF MEDICINE

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## EDITORIALS

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### Mothers Who Might Have Lived

The fires of discussion over the record of maternal mortality in the United States, instead of dying down, seem to be flaming higher and hotter. It was the topic on January 18th, at the annual meeting of the Maternity Center Association at the Waldorf-Astoria. A dozen remedies were brought forward by various speakers, and nearly everybody concerned with childbirth received a rap from somebody's cudgel—doctors, midwives, hospitals, medical schools, and even the city government, which ought to extend prenatal and confinement care.

The verdict issued in November by a joint Committee on Maternal Mortality from the New York Academy of Medicine and the New York Obstetrical Society, it will be remembered, was that 65.8 of the maternal deaths included in its investigation might have been prevented "if the care of the woman had been proper in all respects."

The obstetricians certainly have the courage of their convictions in bringing the pitiless spotlight of publicity to bear on a situation for which the profession must accept much of the blame. The criticisms made in medical circles mention needless operating, incompetent services, unsuitable environment, the advantages and ease of operative deliveries in smaller hospitals, the need for the control of hitherto unsupervised institutions and better instruction and control of midwives as points which need attention.

This grave situation is at once sobering and stimulating. It is stimulating because it calls attention sharply again to an opportunity to push the eternal campaign for life-saving in a new direction. The high rate of maternal mortality in this country has long been known, entirely too long, in fact. Other mortality rates have been driven downward. The general mortality rate, for example, has been cut more than 25 per cent, infant mortality cut something like 45 per cent, and the death rate from tuberculosis cut 65 per cent.

In the face of these splendid advances, however, the maternal death rate has shown little or no improvement. We pride ourselves on our increasing knowledge and skill in prenatal care, sanitation, and asepsis, we think we have improved our methods in modern obstetrics, and we believe our hospital facilities are the last word, yet there stands the record in cold figures.

Among all the countries reporting on maternal mortality, the United States and Scotland lead the world, two countries that suppose themselves to stand at or near the top in medical skill. As we are reminded by the Statistical Bulletin of the Metropolitan Life Insurance Company, the maternal mortality rate in the United States Birth Registration States in 1915, the first year for which the figures are available, was 6.1 per 1,000 live births; in 1932, the same area showed a rate of 5.9, while the average rate for the area during 1928-1932 was 6.0.

It is true that few other countries have shown any improvement, and eight, in fact, have shown an increase in maternal mortality since 1910, but that does not excuse us from our plain duty. If any such percentage of these deaths are preventable, as the committee of the Academy aver, an amazing opportunity lies invitingly before us. The committee in its recommendations stresses the need for better education and training of physicians and midwives, the relative safety of delivery at home, and more rigid measures for asepsis in obstetrical cases in hospitals. Earlier studies support the belief of the committee that two-thirds of the lives now lost can be saved. Every death means that some home has lost the one who makes it a home. Here is a challenge to the best and highest skill that America possesses, to better the record in the year before us.



## Helpful Advice for Nazi Invalids

A clever non-Jewish physician, Dr. Lukat-chewsky, writes an amusing communication to a newspaper in Basle, Switzerland, that is attracting the attention of the medical press. He remarks that since the Jewish spirit is to be destroyed in every branch of life according to the National Socialist doctrines, he is anxious to provide a medical guide so that consistent anti-Semites should know what to avoid when they are ill.

A Nazi who has syphilis must not allow himself to be cured by salvarsan, because it is the discovery of the Jew, Ehrlich. He must not even take steps to find out whether he has syphilis because the Wassermann reaction which is used for the purpose is the discovery of a Jew. If he thinks he has gonorrhea, he must not seek to establish the fact, because again he will be using the method of a Jew, Neisser. A Nazi, who has heart disease, must not use digitalis, which comes from a Jew, Ludwig Traube. If he has a toothache he will not use cocaine, or he will be benefiting by the work of a Jew, Salomon Stricker. Typhus must not be treated or he will have to benefit by the discoveries of the Jews, Widal and Weill. If he has diabetes he must not use insulin, because of the research work of the Jew, Minkowsky. If he has a headache, he must shun pyramidon and antipyrin (Spiro and Eilege). Anti-Semites who have convulsions must put up with them for it was a Jew, Oscar Liebreich, who thought of chloral hydrate. The same with psychic ailments, Freud is the father of psychoanalysis.

Anti-Semitic doctors must jettison all discoveries and improvements by the Nobel prize men Volitzer, Baranaj, Otto Warburg, the dermatologists, Judassohn, Bruno Bloch, Unna, the neurologists Mendl, Oppenheim, Kronecker, Benedikt, the lung specialist Fraenkel, of the surgeon Israel, anatomist Henle, and others.

## Health and Beauty

Someone had estimated that the regular customers of the "beauty" industry in the United States number over 20,000,000 women, or five times as many as the total number of men enrolled under the American flag during the World War. Not all the four million men smelt powder, but every one of the twenty million women face it without flinching. The procession passing in and out of the beauty par-

lors spends more than half a billion dollars a year, we are told, or more than one and a half million dollars a day. We are further informed that this is more than was spent last year on automobile and truck bodies, although the connection is not quite clear.

What our statistical friend fails to mention is that if these women realized the beauty that health brings, some of the millions of dollars now spent in beauty parlors might go, with better results, for healing the big and little illnesses that dim the eye, line the face, droop the erect figure, and play havoc generally with good looks.

Every doctor can tell of beauty that has been brought back by restored health. Yet the big parade of women chasing beauty passes the doctor's office by, and pours a flood of gold into the purses of the beauticians. If the truth could only be implanted in woman's mind that there is no beauty like good health, the physicians would have a truly golden opportunity to improve the health and looks of the nation.

## Making the Public Too Health-conscious

A physician in the Middle West took the trouble to jot down a list of the various health rules broadcast by radio, newspapers, etc., as essential to his well-being, and found that if he performed all the exercises, rites and stunts that were demanded, it would take from five to eight hours a day, enough to break down any man below par physically who might try to gain health by this route. The public is deluged, inundated, swamped, by free advice on health. Forty magazines have health articles in every issue; the daily papers run a dozen syndicated health columns; books drop from the presses in thousands, and the land is filled with pamphlets, lectures, health instruction in the schools by physicians, nurses, and teachers. "On the side" are the loud claims of quacks, charlatans and shysters, and advertisers step in to capitalize it all by vending their products.

Beyond question untold good has been done by the great campaign of public health education, but in some cases it has gone to a point where people are so busy keeping their health that they never have time to use or enjoy it. They are so possessed by the fear of disease that they are in a panic over it. This Middle Western physician was told solemnly by a salesman that every nook and corner of his house ought to be the same temperature day

and night, week in and week out, and was assured that the health of his family depended on it.

A vacuum cleaner salesman told him that the emptying of a vacuum-cleaner bag was deadly, though he could not explain why the germs, so fatal in the bag, had not killed them all when in the rug. The electric refrigerator man warned him of ptomaines in the icebox. Aluminum-ware people tried to frighten the family with perils of swallowing slivers from enamel utensils, while the enamel-ware salesman came back with the claim that salts of aluminum cause cancers. All in all, it seems a miracle that anyone is alive.

The "safety-first" campaign in the schools is excellent in many ways, but if carried too far it will make us a nation of mollycoddles, in the view of this physician, Dr. Thurman B. Rice, of Indianapolis, as expressed in a paper read at a medical meeting in his city. "God pity us," he exclaims, "if we should ever have to go to war with an army of 'safety-first' boys." And the teachers are doing something more, as he sees it. They are making their health teaching unattractive by dinging everything into the child's head as a task and a duty until the child hates it. Long-faced, sour-minded teachers of hygiene are doing more harm than good. Vitamins are in attractive foods as well as unattractive ones. Baths, tooth-brushing, walking, and playing in the sun are pleasures and should not be made disagreeable.

A tendency has also sprung up to make health exercises expensive, when just the opposite should be the rule. Simple foods, outdoor games, fresh air, sunshine, water, home amusements, are ideal for health and cost little or nothing. A whole food program, avers Dr. Rice, can be summed up in one sentence, and he challenges any member of the medical profession or any dietitian to add one important word or phrase to the following sentence:

"A balanced ration is an abundance of a variety of clean, wholesome, not too denatured food, carefully prepared, attractively served, and eaten in peace and contentment." If this menu lacks anything, he feels sure it will be adequately supplemented if common sense is used and particular preference shown for the protective foods—milk, vegetables, and fruit.

Dr. Rice should not be misunderstood as criticizing sound public-health instruction. He

favors it strongly. What he objects to is overdoing it to the point where people are thrown into a panic. He has in mind a mother who is so obsessed that she spends nearly all her time fussing with her four-year-old child. No germ could possibly get to that child without a stiff fight. The little girl has never been permitted to play on the floor. She wears heavy cuffs so she cannot put things in her mouth. Theoretically, she should take the prize at a health exhibit. Actually, she is neurotic, pale, thin, bored with the task of living. Her temperature is taken every day, her weight recorded, and she has been treated for a long string of ailments, mostly no doubt imaginary. The mother is "health-conscious" to the point where ill-health is the result.

Teach the public the rules of health, says Dr. Rice, but remember that "it is not well for the health of the public to make it excessively health-conscious."

### Handy-Guides to Homicides

A "mystery" murder novel that has had a considerable vogue this winter is of particular interest to the medical profession, because murder is committed by putting a capsule filled with poison into the box of medicinal capsules prescribed by the physician. When the patient took the capsule of poison, he was seized with violent pains, and expired. The diabolical ingenuity of the murderer appeared when the autopsy showed no trace of poison of any kind. The wall of the patient's stomach was found to be perforated, and this was clearly the cause of death, but the physician declared himself "completely satisfied" that the victim "died from causes which can only be described as natural," because he could find no other cause. A gastric ulcer could have made the perforation, he said, and the patient was suffering from gastric trouble, so he was convinced that his verdict was sound.

The hero of the story, however, was not satisfied. An earlier attempt had been made to poison the victim with arsenic, and he was convinced that the victim had been poisoned—if not with arsenic, then with some other drug. There is not room here to relate the entire story of his investigations, but, to make a long story short, he found that the murderer had filled the fatal capsule with a white alkaline metallic element that would burn a perforation in the wall of the stomach and unite with the digestive juices to form common salt,

which might be found quite naturally in anyone's stomach.

It is not necessary to name the substance, as every physician will recognize it at once, but the novelist names it, over and over, and gives sufficient directions so that almost anyone could prepare a fatal capsule and slip it into the box used by the "rich uncle" or the "hated rival."

The craze for murder mystery tales was bound to lead to a plain guide to murder like this sooner or later. The very essence of such a story is to have a killing so satanically clever as to baffle everybody except the Sherlock Holmes whose eye can penetrate all secrets and whose hand can entangle all webs. So our printing presses are turning out thousands and millions of copies of books describing murders that are almost impossible to detect. True, some of them are ludicrous. One villain in a recent story, for example, stabbed his victim with an icicle, so that no trace of the weapon was found—only a puddle of water, which naturally showed no fingerprints! But no epidemic of icicle murders has been ensued.

It is a very different thing, however, when an author gives plain directions for mixing poison with the doctor's medicine, with the added assurance that a postmortem will never find it. There are plenty of murders blazoned on the front pages of our newspapers now. How many more go unsuspected nobody knows except the guilty. But it is surely not necessary to crowd the shelves of the bookstores and public libraries with volumes telling multitudes of readers just how to go about it without fear of detection.

### Let the Laity Stop Trying to Do the Doctors' Thinking for Them!

The skill of the expert diagnostician in putting his finger on the sore spot was displayed by Dr. Walter T. Danureuther in his inaugural address as President of the Medical Society of the County of New York. The sore point is the effort of "others attempting to do our thinking for us," and "the impotence of amateur influences to dabble independently in medical matters."

Everybody had more say in what to do for the sick, apparently, than the doctor, and arrangements are made to pay everybody, too, except the doctor. "A glaring example," as he well remarks, are the Workmen's Com-

pensation Insurance Laws of New York State. If the medical profession had been permitted originally to have a part in framing these laws, "employer, employee, and doctor would not now be so dissatisfied with their operation, nor would it have been necessary for the Governor to appoint a committee in 1933 to recommend amendments to correct existing evils."

Next we have the majority report of the Committee on the Costs of Medical Care, "which proposes to mechanize the medical profession, establish group practice, and foist state medicine upon the American people." Its fallacies, Dr. Danureuther declares, "are a menace to the public, destructive to the ideals of the medical profession, and bad sociology." Wherever tried abroad, this scheme has "definitely lowered" the level of medical service.

Almost all the current difficulties of organized medicine, in fact, "may be fairly ascribed to extraneous influences: legislative, governmental, industrial, sociological and institutional," and Dr. Danureuther remarks caustically that "there are so many self-anointed reformers who have shown a willingness to make our affairs their business that a concerted and sustained campaign to direct our own destiny is imperative."

Then, there are the misguided philanthropists. They too are trying to do the doctors' thinking for them, and we are assured that they are "the most pernicious influence which has affected the practice of medicine in recent years." True, the profession is grateful to these liberal contributors, "but wealth is no criterion of good judgment or honesty of purpose, and all philanthropists do not seek the advice of unselfish physicians who have a correct perspective of medical economics." And not all these "volunteer uplifters" are "without a thought of personal gain, despite their avowed purposes."

A spree of hospital-building has also been indulged in by national, state, county, and city governments in recent years such as the world has never seen before in its history. "Millions of the taxpayers' money," observes Dr. Danureuther, "have been expended on government hospitals which surpass in size and magnificence most of the private institutions and which even the politicians are finding difficulty in filling with free patients." Many of them are located "without any apparent regard for the present or future needs of the population."

The entire country is over-hospitalized, in the doctor's opinion; it has been "on a building splurge, erecting medical emporia so elaborately equipped that they are economically unsound." What would be better, he thinks, would be extension of medical care in the patient's home, which would relieve overcrowding in hospitals, "while at the same time it would cost the city less to pay the family physician a modest fee than it does to maintain the patient in a charitable institution."

All these lay interferences in the doctor's field have gone far enough, in fact, too far. Medicine "must oppose outside meddling and selfish commercialism," declares Dr. Dannreuther. "It is prepared," he admits, "to cooperate in every way to preserve the health of the individual and the community, but it is entitled to an independent career, adequate compensation from those able to pay, and the right to control its own affairs."

### **A Report on the Plight of Science in Germany**

So much has been said about the physicians, professors, and other scientists who have been driven out of Germany that many of us have forgotten to ask what the situation may be of those who still remain there. Dr. Alice Hamilton, of the Harvard Medical School, spent three months in Germany in the early part of last year and makes a remarkable report of what she found there, in the January Harpers Magazine. She is an expert witness, too, for she did graduate work in medicine at the Universities of Leipzig and Munich in her younger days, when the German universities were regarded as the bulwarks of freedom in scientific research, and so is well qualified to speak of the contrast they present now.

Hitler and his party are not only molding the entire German people to their hearts' desire, it seems, but Dr. Hamilton reports that they have decided that "intellectualism" is to be discouraged. "Intellectual training does not serve in a moment when steel is needed," declares Hitler, in so many words in his book, "Mein Kampf." "Discipline and obedience" are needed rather than "intelligence and intellectual independence." More unmistakable was the blunt announcement of the new Commissar for Education, Rust, last April, that "unprejudiced, objective, scientific teaching, which is blind to the spiritual changes within the nation, will no longer be tolerated."

And Dr. Hamilton testifies that it was not tolerated. When she reached Germany last April, "academic heads were falling right and left." She was told that "no research work is possible in German universities now." One professor, now discharged, said: "For research one needs quiet, security, opportunity for concentration, none of which we now possess. You cannot carry on any real work with a sword of Damocles hanging over your head." Some might think it comical, if it were not so serious, to learn that one professor, Bluntschli, "was forbidden to lecture on anatomy because someone discovered that he was a member of the League for Human Rights."

Medical students, so we are told further, must fall in line with the new gospel. Habering writes in a German medical journal: "It is necessary to remove the medical student from the influence of intellectuals whose minds range freely, if he is to be deeply rooted in the national life." Reverence for the past is to be inculcated rather than curiosity about the undiscovered. "A very concrete and most disastrous measure," says Dr. Hamilton, "aimed against scientific inquiry, has been adopted only recently, namely, the prohibition of animal experimentation. This means that practically all advance in the fundamental branches dealing with normal and diseased living matter comes to an end in that country which was for years in the foreground in just those fields."

It is not in the province of this journal to say that the Hitler program in Germany is right or wrong, but Dr. Hamilton's report is of supreme interest to all who hold dear the welfare of pure science in the land made illustrious by the long roster of famous German savants.

### **Protection of the People Against Unlicensed Attempts to Practice Medicine**

For a long time the medical profession has heard but little of legal efforts to protect the public against damage that might follow in the wake of those who impudently, without training, attempt to diagnose, and treat, disease, without the license provided for in the laws of the state.

Recently one such person has been brought to book. One Domenico Mancini, of Endicott, N. Y., was fined \$75 and sentenced to six months in Broome County jail for prac-

ting medicine without a license. The jail sentence was suspended during good behavior for one year.

It is to be hoped that the members of the Medical Society of the State of New York will observe carefully any such situations that may come under their notice, that they will attempt to secure facts and then transmit their information to the Boards of Censors of their County Societies. Far too often, individuals such as Mancini have carried on without interference because no one felt impelled to bother himself until the tread of the unlicensed boot had crushed his medical toe.

The matter goes much farther. In these days, the charlatans of all kinds stage their acts, and the many "fringe-of-medicine" performers bark into their booths the unsuspecting and those of the mental grade supposed to be born at the rate of one every minute.

It is time that the people be better protected. No doubt, the doctors far and wide dislike to search out and attack the unlicensed "magic" men, the unlicensed fakirs, those even who have a part license to invade the practice of medicine, the fringe of medicine technicians but who still are dangerous. They hesitate for fear that they may be accused of trying to protect their own pocket books.

The JOURNAL wishes to sound a note of duty in this connection, duty of the members not to their pocket books, not only to their membership, but primarily to the public whose health it is their duty to conserve.

The unlicensed practitioner can only be put out of business if the doctors will act.

A CURRENT soap advertisement pictures the stork bringing a baby that looks to be about two years old, fully dressed, with a fine crop of blond hair neatly brushed and parted. How times have changed.

THE United States had in 1933 what was probably the best health record "of all times," according to a report of the Metropolitan Life Insurance Company. The signs, too, for 1934 are excellent, barring unforeseen epidemics. Influenza is not expected to visit us in extensive or virulent form, as we had a major visitation in 1932-1933.

An English schoolboy, writing an essay on "Doctors," said: "Doctors are very kind people. Sometimes they order the schools to close."

# Correspondence

*Anonymous letters will not be noticed. All communications must carry full name and address of the writer, but these are omitted on request.*

To the Editor:

Permit me to congratulate the authors of the editorials in the January 15th issue of the Journal. They exhibit a philosophical insight and breadth of vision all too rare in our professional journals.

As a specialist many I comment particularly on your editorial on "The Certification of Specialists." In the main I am fully in accord with the views expressed concerning the present usefulness and the probable future importance of the work of the Examining Boards now functioning. Surely they have blazed a trail for the licensing of specialists which is of immense importance to both the profession and the public.

We should all, therefore, be interested in enhancing the usefulness of these Boards by making their certificates sought after by all who would aspire to a specialty. At the present time there are in this State many competent specialists who do not deem it worth the effort to attain a certificate. Then, too, there is not now available to the profession in general, and to the public, any ready means of identifying a certified specialist short of visiting his office and finding his certificate. To state these facts is to point to two very grave defects of the present system.

I believe both these faults may be easily remedied by giving publicity to the holding of a certificate. Furthermore this object may be readily attained in this State by attaching to the specialist's name in the State Medical Directory some abbreviated notation such as "Cert. Am. Bd. Oph.," etc., as the case may be. Can there be any valid objection to such a plan? Moreover, is it not likely that publicity of this sort would further the formation of examining boards in all specialties and that then no specialist worthy of the name would care to be listed in the Directory without the appropriate legend?

I feel so positive that I am right in this matter that I would appreciate your publishing this letter or embodying its views in a future editorial.

JOSEPH POPPER.

To the Editor:

I wish to express my pleasure and satisfaction in perusing the January numbers of the State Journal. The appearance of the Journal is certainly improved and the advertising material is nicely presented. The scientific articles are of excellent quality and all the Editorials thus far observed have been excellent reading for the rank and file of physicians throughout the State.

I was particularly impressed with the editorial in the second number which called attention to facts that can be forgotten in the uncertain affairs of to-day.

If this change in the direction and publication of the State Journal is a money saver, I should estimate this as the least important of its accomplishments.

DR. CHARLES H. GOODRICH  
280 Park Place, Brooklyn, N. Y.

# Society News

## Committee on Legislation

### Bulletin No. 3

Since the issuance of our last bulletin the following bills have been introduced:

Senate Int. No. 207—Mastick; Assembly Int. No. 248—Pratt, would amend the Vehicle and Traffic Law by increasing the fee for operator's license from \$1.00 to \$3.00 and for the renewal of license from 50c to \$2.00. Referred to the Internal Affairs Committee.

Every doctor should be interested in this amendment because of its adding an additional annual tax of \$1.50.

Senate Int. No. 235—Byrne, would add a new section to the Labor Law for bureau of industrial rehabilitation in the Labor Department in charge of a chief and nine investigators, bureau to operate clinics, each in charge of a physician with necessary assistants to give medical treatment to persons injured in industrial accidents and applying for workmen's compensation. Referred to the Labor Committee.

We are informed that this bill was prepared by the Department of Labor and that members of the Department have been talking about its provisions for some time. It would set up the Department of Labor as a treatment agency and with its salaried physicians very definitely compete with the general practitioner. In the light of our present information, we think this legislation should be opposed.

Senate Int. No. 257—Warner; Assembly Int. No. 279—Otto, would amend the Public Welfare Law relative to responsibility of public welfare districts for providing medical care by striking out "and for such persons otherwise able to maintain themselves." Referred to the Judiciary Committee.

You will recall that a bill similar to this was before the Legislature last year. It remained in committee in both Houses.

Senate Int. No. 280—Esquirol, would amend the Criminal Code by giving special sessions courts jurisdiction of offenses affecting public health. Referred to the Codes Committee.

We haven't been able to discuss this bill with Senator Esquirol, hence we are not in a position to comment upon it in this bulletin.

Senate Int. No. 297—D. T. O'Brien; Assembly Int. No. 324—Garnjost, would add a new section to the Insurance Law to exempt non-profit hospital service plans of a corporation organized under Membership Corporations Law so they may provide hospital care, with approval of insurance superintendent. Referred to the Insurance Committee.

The object of this legislation is to permit hospitals to conduct a form of insurance by selling membership which would entitle members to a certain amount of hospital service with no extra charge. The amendment would permit such organizations to operate under the supervision of the Insurance Department, but

without complying with all the conditions ordinarily required by the Department.

Senate Int. No. 304—Thompson; Assembly Int. No. 327—Hall, to amend the Public Health Law by requiring police to remove unidentified dead bodies to nearest general hospital maintained by county where an autopsy may be had unless objection is made by next of kin within 48 hours after death. Referred to the Health Committee.

Assembly Int. No. 264—Cohen, creates temporary commission to make a study and survey of administration of Workmen's Compensation Law and appropriating \$15,000. Referred to Ways and Means Committee.

Assembly Int. No. 289—Theodore, to amend the Workmen's Compensation Law by permitting injured employee to request employer to furnish medical attendance or to furnish attendance himself at expense of employer. Referred to the Labor Committee.

This is the free choice bill that Mr. Theodore had in last year.

Assembly Int. No. 353—Hamerman, would add new section to the Public Health Law prohibiting employment of domestic servants in first and second class cities not having a physician's certificate showing freedom from tuberculosis and any other contagious or communicable disease. Referred to the Health Committee.

It seems to us that this amendment is more exacting than is necessary. A person may have tuberculosis in a quiescent state, and so long as it remains that way, be perfectly harmless to associates. Our suggestion is that the examination is highly desirable and the prospective employer should be accurately informed as to the physical condition of the applicant, so that if there is no immediate danger of communicating the disease the employer should be permitted the privilege of hiring the applicant if he desires to do so. If all persons with syphilis, gonorrhea, and other communicable diseases are prevented from taking positions as servants regardless of the stage of their disease, it seems to us an unnecessary hardship will be imposed.

The local newspapers have announced for two days that an antivivisection bill has been introduced. The announcement is premature; no such bill has appeared as yet, but we shall be greatly surprised if one does not appear.

You will note above that the Legislature will be asked to appropriate \$15,000 to finance an official investigation of the manner in which the Workmen's Compensation Law is operating. There doesn't seem to us to be any need for this expenditure; two well-qualified committees have studied the situation in the last two years and the report of the second of these was submitted to Governor Lehman and published within the last month. You probably have a copy of the report. The Governor's committee is very eager to have its report recognized and asks that every County Society take some action with regard to it. It is hoped that the report can generally be accepted and that

suggestions will come to the Governor for amendments to the law in accordance with recommendations submitted by the committee. Will you take this matter up with the president and secretary of your County Society?

Are you keeping your legislators informed as to your reaction upon the bills which we have reported? Quite a number of chairmen are communicating with us regularly regarding the reports we are submitting, but we should be much happier if we could say that we are receiving communications from every chairman. Please give this matter your earnest attention and keep in touch with us and with your legislators.

A good many complaints have reached us recently regarding certain objectionable radio programs; namely, those of the Crazy Water Crystals Company, Father John's Medicine, and Mount Clemens Mineral Water. We are endeavoring to find a way to prevent their continuance, but we find it a very difficult matter. These people hold contracts with the national broadcasting companies, which claim they are not violating any law. These companies are purely commercial-minded and are not inclined to respect our Code of Ethics. If you have any suggestions as to how we might proceed more effectively, we shall be grateful to have them.

At the suggestion of the American "dent of the American" telegraphed to certain asking them to support the treatment only of veterans who have disabilities related to service.

We are planning a meeting of the county chairmen. Tentatively, Thursday, February 15th, has been selected as the day. The conference, of course, will be held in Albany. Will all of you who are chairmen please keep this date open.

P. S. Assembly Int. No. 364—Mr. Breen, the annual vivisection bill. This bill was introduced January 25, right after we had written the above bulletin. It is identical with the bill of last year.

#### COMMITTEE ON LEGISLATION:

Harry Aronow,  
John J. Buettner,  
Bernard B. Berkowitz,  
B. Wallace Hamilton,  
Edward E. Haley,

#### Bulletin No. 4, February 2, 1934

Since our last bulletin the following bills have been introduced:

Senate Int. No. 336—Hendel, to amend the Public Health Law by providing a child or person not vaccinated must be admitted into school in a city of 50,000 or more inhabitants, on recommendation of health or other board having jurisdiction. Referred to the Health Committee.

Mr. Hendel has introduced this bill by request of one of his constituents. He is not in sympathy with the bill and will not press it. We, of course, have filed our opposition and

will do what we can to prevent the bill from leaving committee.

Senate Int. No. 348—Baxter, would add a new section to the Penal Law making it a misdemeanor for a person wilfully to give a false police alarm or ask for police assistance through a false statement of fact or wilfully through any such false statement to ask for assistance from any funeral director, embalmer, doctor, or hospital or the aid of any ambulance. Referred to the Codes Committee.

Senate Int. No. 373—Crawford, would add a new section to the Penal Law, providing a hospital supported at public expense shall not charge any fee for medical, dental or pharmaceutical services while operating clinic to which public is invited. Referred to the Codes Committee.

Senate Int. No. 374—Crawford, would add a new section to the Public Welfare Law for central bureau of hospital clinics in each public welfare district to promulgate rules for persons applying for treatment in hospital clinics. Referred to the Judiciary Committee.

You will recognize that these latter two bills were before the Legislature last year. We approved them and a hearing was accorded the hospital dispensary bill. During the summer several committees of hospital representatives studied these questions and have prepared a report of their findings which they have presented to the New York County Society and we are told it was favorably received. Of course, we are heartily in accord with the principle of both bills and we shall approve them again this year.

Senate Int. No. 383—Wicks; Assembly Int. No. 450—Steingut, would extend to February 15, 1935 life of Temporary Emergency Relief Administration for unemployment relief and making other changes. Referred to the Finance Committee.

Senate Int. No. 427—Cilano; Assembly Int. No. 442—O'Mara, relative to emergency relief administration so as to permit hospital care and home relief for veterans. Referred to the Finance Committee.

Mr. Cilano had this bill last year. It includes veterans among those to receive home relief and hospital care from the county commissioner.

Senate Int. No. 450—H. L. O'Brien, to amend the Education Law to permit an osteopath to administer drugs or perform surgery, except certain operations, applicant for license to pass examination prescribed for physicians. Referred to the Education Committee.

This is the osteopathy bill which we have defeated in two preceding years. We shall need your hearty assistance in killing it again.

Senate Int. No. 462—McNaboe; Assembly Int. No. 489—Condon. This is a new hospital lien bill which does not include the physicians and nurses. Referred to the Judiciary Committee.

Of course, we shall lend our support to the first bill reported this year, in which claims of the physicians and nurses are recognized.

Assembly Int. No. 410—Murphy, would amend the Workmen's Compensation Law by providing compensation for all occupational diseases arising out of employment and relative to notice, information and penalty. Referred to the Labor Committee.

Another occupational disease bill which provides for an unlimited list and will be opposed by us as are the others similar to it now before the Legislature.

Assembly Int. No. 415—Dunkel, relative to the practice of pharmacy. Referred to the Education Committee.

This bill was prepared by the Pharmaceutical Association according to our information.

Assembly Int. No. 417—Dunkel, to amend the Education Law by providing package failing to bear statement of content of barbituric acid is misbranded and relative to use of poisonous or habit-forming drugs and chemicals. Referred to the Education Committee. A similar bill was before the Legislature last year, introduced by Mr. Gimbrone. A good deal of opposition was expressed to its advancement.

Assembly Int. No. 485—Breitenbach, to amend the Workmen's Compensation Law relative to occupational diseases so as to include in definition "dermatitis" any process involving direct contact with brick, cement, lime, concrete or mortar. Referred to the Labor Committee.

We haven't seen a copy of this bill as yet and, hence, are not in a position to make any comment.

Assembly Int. No. 507—Monahan, to amend the Labor Law, making 8 consecutive hours in any 24 a legal day's work for nurses in public hospitals or hospitals supported in whole or part by public funds. Referred to the Labor Committee.

Assembly Int. No. 520—Schwartz, would add a new section to the Penal Law making it a misdemeanor to sell drugs, medicines and

other pharmaceutical preparations including lotions not having affixed on bottle, box, vessel or package a label giving name and quantity of each ingredient. Referred to the Codes Committee.

#### ACTION ON BILLS

Assembly Int. No. 128—Condon, practice medicine, person pardoned; advanced to third reading.

Senate Int. No. 249—Mandelbaum, State Housing Law, providing for establishment, organization, operation and dissolution of municipal housing authorities. Has gone to the Governor.

We did not report this bill because we did not want to do so until we could read it. It does not affect the practice of medicine, but it may indirectly have a great effect upon public health conditions in our larger cities. It authorizes a community to create a housing authority with power to purchase houses in slum districts at their assessed value and convert the space into parks or rebuild it with a certain type of tenement house. The bill met little opposition; it was passed through both houses as an emergency measure and without doubt will receive the Governor's signature if it has not already done so.

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It is important that you get in touch with members of the Senate Education Committee and place at once your objection to the osteopathy bill. The bill is identical with the one of last year and we shall base our opposition on the same grounds; namely, that the osteopaths have not studied pharmacy or materia medica; they have no knowledge of drugs; in fact, they have been trained to condemn drugs; and although the bill would seem to give them the use of but three drugs, it would really give them the use of three enormous groups of drugs, some of which are among the most powerful narcotics and poisons used by the physician.

We have received a number of inquiries concerning a 2 per cent sales tax that would apply to professional incomes as well as sales. No such bill has been introduced this year. Last year Senator Fearon had a 2 per cent sales tax bill which exempted the professions. During the summer there has been considerable agitation for the recommendation and passage of such a bill. The Council of Mayors and the realtors have endorsed the proposition and are endeavoring to create public sentiment in its favor. On the other hand, the Retail



Merchants' Association has been marshaling other groups in opposition to the proposition. If such bill is introduced we shall send you a copy as early as possible, in order that we may have your instructions.

We have definitely decided upon Tuesday February 13th, as the date for the conference of the County Chairmen. We were obliged to change from the 15th because of some other engagements. Will the chairmen therefore arrange their programs so that they can attend this important conference in Albany on Tuesday February 13th. Further instructions will be found in our next bulletin.

The "white book" has not yet been published, but it is important that you should communicate with members of the Education Committee in the Senate your opposition to the osteopathy bill and with members of the Senate Public Health Committee your opposition to the antivaccination bill. Members of those committees are

#### PUBLIC HEALTH

Joseph A. Esquirol	Samuel Mandelbaum
(Ch.)	Michael J. Kernan
John T. McCall	Arthur H. Wicks
A. Spencer Field	William H. Lee
Harry J. Palmer	Walter W. Stokes

#### PUBLIC EDUCATION

A. Spencer Field	Ogden J. Ross
(Ch.)	Albert Wald
Henry L. O'Brien	J. Griswold Webb
Julius S. Berg	Serbury C. Mastick
Joseph D. Mann, Jr.	Thomas C. Desmond

#### COMMITTEE ON LEGISLATION

Harry A. Anaw  
John J. Buettner  
Bernard B. Berkowitz  
B. Wallace Hamilton  
Edward E. Haley

### Report of Executive Officer to the Executive Committee

Your Executive Officer begs leave to offer the following report for the Month of January.

The County Societies efforts to assist their with the various relief agencies are at present Welfare commissioners, whether county city or town, are providing home relief for all indigents, and home relief embraces medical care. If the case method is employed by which physicians are authorized by the welfare commissioner 66 66 per cent of the their homes, the Temporary Emergency Relief Administration (TERA) refunds the welfare commissioners 66 66 per cent of the amount expended in providing the care. This

method obtains generally in the rural districts. In many of the larger cities, however, the welfare commissioner employs physicians on salary to care for the indigent and by this method forfeits the TERA refund. The welfare commissioners are also obliged to provide hospital care when it is needed. The budget that the TERA has for financing work relief is now supplementing the home relief budget while the Federal Government has taken over those employed on work relief under its new Civil Works Administration. Directors of the CWA have been instructed by the Federal Government to provide medical care for their employees by cooperating with the County Medical Societies. Lists of physicians wishing to treat injured workmen are being prepared by County Societies and submitted to the CWA directors. In many instances injured workmen are permitted to select from the list the physician they would like to have care for them. Physicians submit their bills through the director to the United States Employees' Compensation Commission and are permitted to make charges such as they would if privately treating persons in that same economic class. Another group Civil Works Service (CWS), includes persons who are employed by the state in assisting with CWA projects. These people are insured under the State Insurance Fund. On all projects financed by the state, as, for instance, highway construction, etc., the employees are insured by the state and carried with the State Fund.

In this connection it is interesting to know that the State Insurance Fund has sent to some CWA directors—probably to all—a letter advising them that if medical attention is needed for any CWS employees, certain named physicians are to be employed. When the physicians of Herkimer County, which was the first to report this action that the State Fund had taken, presented the CWA director a list of physicians willing to work for the United States Employees' Compensation Commission, they were told by the director that he had received instructions from the State Fund to employ only one of two named physicians. Obviously, neither the director nor the physicians were aware of the distinction between CWS and CWA for the State Fund can have nothing to do with CWA employees.

It is rather presumptuous for the State Insurance Fund to select physicians. It probably reasons that if the state carries the insurance and the law provides that the employer shall provide medical care, the State Fund being the insurance agent but, nevertheless, carrying the name "State," can assume the privilege of providing the medical care. It is rather disappointing to find that the State Insurance Fund is not willing to permit the injured to employ a physician of his own choice, a plan which is working very satisfactorily under the TERA and gives promise to work equally satisfactorily with the United States Employees' Compensation Commission. Efforts are made annually to have all industrial insurance in the state carried by the State Fund. Another such bill has been introduced this year. Another bill bearing upon this subject is before the Legislature, prepared by the Department of Labor, it is said, asking for authority for the Department to establish rehabilitation clinics throughout the state where

injured workmen may be treated and provided medical and nursing service.

A bill asking for an appropriation of \$15,000 to make an investigation of the Workmen's Compensation Law, has been reintroduced. It seems that there is no need for further study of this law, but an investigation of the motives of the State Department of Labor and the State Fund might be worth considering. This bill calls for the appointment of a certain number of Senators and Assemblymen and two persons to be appointed by the Governor. If there is any likelihood of the bill going through, it might be well for the Medical Society to have in mind one or two persons to be recommended to the Governor for his consideration as candidates for appointment to the commission.

Some pernicious legislation has appeared. The annual antivivisection bill has been introduced this year by an Assemblyman from Troy; the antivaccination bill which has been out for several years has been reintroduced; and we are assured that the osteopathy and chiropractic bills will be back. A brief of the chiropractic bill is being distributed.

Senator Crawford has reintroduced the hospital dispensary and central registration bureau bills of last year. The United Hospital Fund has had an amendment to the Insurance Law introduced which is intended to permit any membership corporation to procure hospital service for its members. This bill has been drafted in accordance with the recommendation made in the report of our Committee on the Costs of Medical Care. Your attention should be directed to the fact that the amendment does not limit the right to provide medical service to hospital corporations, but would permit any membership organization to make arrangements with any hospitals provided they are approved by the Department of Social Welfare, to provide such service, with only one condition, that is that the service shall be nonprofit bearing. A membership corporation is not able to make a profit and distribute it by dividends, but can create a large and well-paid executive staff, so that the creation of hospital membership groups need not necessarily be an undesirable undertaking. There is another angle to this matter that should be given some consideration and that is that there is nothing to prevent an individual hospital from creating a membership organization of its own and in this way hospitals could compete with one another for public support, and in competing they might conceivably reduce the membership fees below what would be the actual cost of the medical service to be provided. In this connection it may be interesting to learn that the Attorney General was recently asked by the Department of State to pass upon an application for incorporation by a group of New York people. He advised against granting them a certificate; his opinion follows:

"I have your letter of December 26th in which you enclose a proposed certificate of incorporation of Royal Sanitarium, Inc., the first two paragraphs of the statement of objects of which read as follows:

"(a) To erect, build, furnish, equip, establish, maintain, manage and operate buildings and institutions in the Borough of Manhattan City, County and State of New York for

the residence, boarding, nursing and lodging of private patients of outside physicians or surgeons for pecuniary profit.

"(b) To furnish the services of duly qualified registered nurses to such private patients but only by the expressed direction, authorization and under the immediate supervisory control and responsibility of such outside physicians and surgeons."

"You request my opinion as to whether the proposed certificate should be accepted for filing by your office.

"The proposed corporation is sought to be formed under the provisions of the Stock Corporation Law, Section 5 of which provides that a corporation may be formed under authority of that law 'for any lawful business purpose or purposes,' with certain exceptions not relevant here. It would seem to me that the term 'business purpose,' in its usual sense, denotes the commercial activities of persons engaged in profit-making enterprises, and that there is a very distinct cleavage between the activities carried on by persons engaged in business and persons practicing a profession. By the training, ability and peculiar skill required, nursing is today recognized as a profession. It does not seem to me that Article 2 of the Stock Corporation Law was intended to authorize a corporation to carry on a profession.

"It is well settled that a corporation may not be formed under Article 2 of the Stock Corporation Law to conduct a hospital (People v. Woodbury Dermatological Institute, 192 N. Y. 454; Opinions Attorney-General 1926, 192; 1928, 249; 1929, 121). This has been based upon the fact that a hospital, as usually constituted, has authority to engage physicians or surgeons for the treatment of its patients and would thus be engaged in the practice of medicine, contrary to law. In the instant case that authority is not sought but there is sought authority to employ duly qualified registered nurses and furnish their services to the patients of the Sanitarium. I think the distinction is insufficient between the powers of an ordinary hospital and the powers sought in the instant case to permit the filing of this certificate. I think, as was said in Godfrey v. Medical Society 177 App. Div. 684, that a dangerous precedent might be made which would lead to the opening of many quack sanitariums and Cure-All institutes under the guise of business corporations or registered trade names of individuals who are not licensed physicians."

"For these reasons, I think the proposed certificate of Royal Sanitarium, Inc., should be rejected."

In response to an urgent request from Dr. Cary, the chairman of the Legislative Committee of the American Medical Association, to Dr. Aranow, we sent telegrams to President Roosevelt, our two Senators and leading Representatives, advising them that our Legislative Committee approves of the President's proposition regarding veteran relief.

During the month communications have been received from physicians in different parts of the state asking whether something could not be done to prevent the Crazy Water Crystals Company from continuing its broadcasts. It recommends the crystals as a cure for almost every disease and does it openly

and brazenly in a manner in which it could never use the newspapers. Dr. Cramp of the A.M.A., advises that they have done all they can to prevent this company from committing this nuisance (J.A.M.A. March 11, 1933, vol 100, pages 760-761), but without avail. He says there is no way of censoring them. This information agrees with what we learned when we made inquiry in Rochester and Schenectady. The local companies told us that it was beyond them, they have to accept what is given them. We are told that recently the company has agreed to modify the character of its advertising.

JOSEPH S. LAWRENCE  
Executive Officer

## Why So Few Physicians Form a Part of the Organization or Are Employed by National Health Organizations

This is one of the five problems submitted to the Committee on Public Relations by the last House of Delegates. Three of them were referred also to the Committees of the State Society on Public Health and Medical Economics, one of them to these Committees and to the counsel and one to these Committees and the Committee on Legislation. These problems have been given a good deal of study since last June. Conclusions will be formulated and published in the reports of these Committees. The first reference is, "Why so few physicians form a part of the organization or are employed by the National Health Organizations?" The Public Relations Committee adopted the report of its Sub-Committee on this question. The question is a complex one. Practicing physicians have not interested themselves in these questions because they are usually so busy with their own private practices and so occupied with their own private worries that they are glad to think that some medical burdens have been shifted to other shoulders. The average practitioner of today received his training many years before the importance of preventive medicine was understood and before much teaching of it was done in our medical schools. The physician's heritage from the past still makes the average physician regard himself as an emergency man and it is difficult to interest him in anything except well developed pathology. A part of the responsibility for the attitude of physicians lies in National Health Organizations themselves. Any physician who would like to work with them has been alienated by the manner in which some are conducted. There should be closer cooperation between all health and welfare groups and the medical profession. No thinking person will deny that to bring about such a state of affairs is a great problem and its solution probably depends upon education. The medical profession is learning that it cannot alone handle the unsolved medicine of today and that there is need of coordinated effort on the part of all the groups which are working in public health. Out of such co-operative effort will come the betterment for which we all are striving and out of it too, will come the mutual understanding and respect which should prevail between all the groups that are working to raise man's living to a higher level. When this co-operative spirit has been developed then there will be no lack

of physicians to form a part of our National Health Organizations.

In the next issue of the STATE JOURNAL will appear a discussion of number two of the references of the House of Delegates to the Committee on Public Relations and in succeeding issues, a discussion of the other references when conclusions are reached.

The Public Relations Committee  
W. H. ROSS, Secretary

## Civil Works Administration

Workmen's Compensation Department of the Civil Works Administration of New York City

—The Workmen's Compensation Department of the Civil Works Administration of New York City was organized by Mr. Howard S. Cullman, Deputy Administrator, with two basic objectives. The first of these was to furnish injured Civil Works Administration workers with competent medical care. The second was to provide a large-scale demonstration of an administrative technique in the handling of workmen's compensation cases free from abuses and rackets which have afflicted the compensation field elsewhere.

At the time the Department was being planned, the Pool Report, with its revelations and recommendations, had just been published. The New York Times, on January 1th, commented editorially on this report that "flagrant abuses are now a matter of common knowledge and understanding. Biased medical reports, incompetent medical treatment, and fee-splitting commercial clinics less clinical than commercial, padded and otherwise fraudulent claims—these are some of them."

Fully aware of these dangers, the Workmen's Compensation Department has endeavored to face the problem realistically. The question of weeding out corruption in this fundamentally humanitarian field would seem to narrow itself to two aspects first, personnel, second, procedures.

On the personnel side, the Workmen's Compensation Department has endeavored to solve its problem by enlisting the services of outstanding experts whose wisdom and integrity were above reproach. The administrative organization which has been built up to date is headed by Miss Mabel Davies, Assistant of Superintendent of  
: and Dr. Samuel  
.. ber of the medical  
.. ment of Labor who  
or the purpose by  
Commissioner Andrews. A medical and surgical board was also formed, on a purely voluntary basis, consisting of a well-balanced group of distinguished physicians representing a widely diversified clinical and hospital experience and representatives of the County Medical Societies. On the board are Dr. Leopold Brahdry, Dr. Ralph Colp, Dr. Robert H. Kennedy, Dr. Marion Kenworthy, Dr. Eugene Pool, Dr. Theodore Sanders, Dr. David J. Kaliski and Dr. John J. Masterson. A medical and surgical advisory committee has also been appointed. Included in this group are Dr. Bernard Sachs, President of the New York Academy of Medicine, Dr. Maurice O. Magid, of the Bronx County Medical Society, Dr. John J. Masterson, of Kings, Dr. David J. Kaliski, of

New York, Dr. H. P. Mencken, of Queens, and Dr. Arthur S. Driscoll, of Richmond.

Believing that procedures in this field are to a very large extent a professional problem, and having full confidence in the personnel chosen to direct these policies, the formulation of a concrete plan has been left very largely in the hands of the responsible medical group.

One of the first acts of the medical and surgical board was to record its opinion that preliminary health examination should be done on all Civil Works Administration workers. The purpose of such examinations was not to reject applicants but to classify them according to their fitness for light or heavy work, or their need for hospital or social service care. It was strongly felt that such examinations were imperative to the well-being of workers who might suffer grave injuries as a result of labor beyond their physical capacity, and that the Government, as employer, was also assuming an unnecessary degree of responsibility for fictitious claims, avoidable accidents, and resulting costs. Delays due to various causes have made it impossible for such examinations to be made up to the present time but it remains the opinion of this Department that they should be made as soon as possible.

With approximately two hundred thousand workers employed by the Civil Works Administration at the present time, it was felt imperative that a plan be worked out which would assure these workers adequate care in the event of injury and at the same time safeguard them and the Government against medical or other racketeering. This problem was further complicated by the fact that some three thousand injuries had already occurred before the creation of this Department, that forms on these cases had been improperly filled out, and that both the administration and treatment of these cases had been proceeding in a wholly unplanned fashion; there was also a strong indication that monopolies in treatment and various medical specialties were already developing.

It was, therefore, necessary to adapt Federal Regulations to the needs of a large industrial center in such a way that first aid on projects would be provided, treatment at the hands of competent institutions or physicians

assured and such medical work and fees as might result distributed equitably on the basis of ability alone without regard to personalities or political affiliations.

The plan which will be put into operation at once will function as follows:

First: Physicians and surgeons registered with the Civil Works Administration will be employed to give first aid on projects primarily on a full-time basis, secondarily on a part-time basis.

Second: A preliminary panel of physicians and surgeons in each borough will be selected to whom cases requiring the services of an individual physician will be referred according to location, in rotation. This therapeutic panel will be composed of physicians chosen by the medical and surgical board from lists submitted by the various County Medical Societies. The dispensary clinical and hospital experience of the selected physicians will be taken into consideration as well as their general qualifications for compensation work.

Third: For hospitalization of injuries, federal, state, municipal and voluntary hospitals, in the order named, will be used to the fullest extent possible.

Fourth: An outstanding group of specialists will be designated in each borough to whom cases needing special care will be referred, in rotation. No monopoly of any specialized service will be given to any individual or group.

Fifth: Energetic accident and disease prevention measures will be undertaken through the first-aid units at the various projects in cooperation with the Engineers' Safety Division.

Sixth: Responsibility for reporting accidents will be centralized by designating one individual on each project or sub-project who will report accidents fully to the central office of the Workmen's Compensation Department.

Seventh: The physician on a given project will be authorized to refer to the central office for physical examination any worker who appears to be in a poor state of health or suffers from an obvious deformity.

HOWARD S. CULLMAN,  
Deputy Administrator,  
80 Eighth Avenue,  
New York, N. Y.

A "Plain Tale from the Hills."—Out in the Rockies, in the he-man country, "where men are men," it looks as if the bracing mountain air has filled the medicine men with the old-time fighting spirit. Peacefully browsing through the medical exchanges we suddenly come across this startling editorial in the Wyoming Section of *Colorado Medicine*:

"There is at least one town in Wyoming where the doctors ought to have their heads bumped against the wall. Like a lot of spoiled kids, they fight, make ugly faces at each other, and talk like fools.

"The State Society ought to throw the whole

bunch out. They are educated and capable in their professional services to the people they serve, but they want to fight. Let them get together and go at it like men or shut up and behave. To go around like a bunch of old gossips is a disgrace to the profession and if they don't see the light, and that right soon, they will all be out in the cold. They can then settle their own malpractice suits or go to jail. Enough said."

Items like this put a "kick" into the usually tame task of exchange reading. Coming issues will be awaited with interest.

# County News

## Albany

Howard Eaton Lomax, Graduate of the Albany Medical College 1892. Member and past President of the Medical Society of the County of Albany. Formerly lecturer in Anatomy at the Albany Medical College. Instructor and Director National Training School for Certified Nurses. Died January 11, 1934 Age 66, from coronary thrombosis.

## Nassau

At a meeting of the Medical Society of the County of Nassau, held on January 30th, 1934, the following resolutions were unanimously adopted:

**RESOLVED**, that the following statement be adopted by the Medical Society of the County of Nassau as representing the attitude of the organized medical profession of the County.

"The Federal and State authorities in the handling of medical care of injured persons have shown an increasing tendency to ignore the economic and professional rights of the physicians. The State authorities are demanding that medical care be given at fees which are less, in many cases, than the cash outlay by the physician and which at best do not give sufficient return to meet the normal overhead expense of the physician.

The Civil Works Administration of the Federal Relief Administration is evidencing a tendency to ignore the practicing physician except as he may apply for relief himself, under which conditions he would be paid only for working in public clinics.

"The State Workmen's Compensation Law provides in Paragraph 13 that fees and other charges shall be such as prevail in the same community for similar treatment of injured persons of like standard of life. In accordance with this law injured workmen in the employ of CWA have been cared for by our hospitals and by our physicians at standard minimum rates, but regulations dated January 23, 1934, addressed to all doctors and hospitals and mailed generally throughout Nassau County by the Nassau County CWA and Emergency Work Bureau provide that injured employees requiring hospital care shall receive general surgical care by the house staff of the institution, and further provides a fee schedule for such items as x-ray examinations which fee schedule is grossly inadequate, representing in many instances only a fraction of the actual cost of such examination.

"It is therefore the sense of this Society that any hospital treating such injured workmen for such inadequate compensation is thereby placed in direct and unfair competition with the members of its medical staff and it is further the sense of this Society that our State and National medical organizations should take vigorous action to effect a repeal of the many discriminatory regulations governing medical care and to secure the recognition by the Federal and State authorities of the principle that medical care is a necessity of life and should be provided when needed

through existing channels and be paid for at current minimum rates, and that in the meantime the local County officials be appealed to for assistance in so modifying the existing regulations as to make it possible for sick and injured clients of the various welfare organizations of the County to receive adequate medical care at fees which do not represent a financial loss upon the physician," and be it further

**"RESOLVED**, that copies of these regulations be sent to the New York State Journal of Medicine and to the Journal of the American Medical Association with the request that it be published, and further that copies be sent to the Board of Supervisors of the County of Nassau, the County welfare administrators, the President and Superintendents of the hospitals of the County, the Secretary of the American Medical Association and the Executive Committee of the New York State Medical Society

## General

*Scientific Proceedings*—Dr. Russell M. Wilder, Rochester, Minn., discussed the "Role of the Parathyroids in Health and Disease" before the Bronx County Medical Society.—Dr. Louis Fischer addressed the New York Society of Orthodontists, on "Interrelationship Between Orthodontia and Pediatrics"—Dr. Karen Horney, Chicago, among others, addressed the New York Neurological Society in a joint meeting with the section of neurology and psychiatry of the New York Academy of Medicine, on "Concepts and Misconceptions about the Principles of the Psychoanalytic Method"—Among speakers who addressed the Society for Experimental Biology and Medicine, were Dr. Sidney D. Kramer and M. Schaeffer, on "Experimental Poliomyelitis; Active Mixtures of the Tissue Culture of Encephalitis by Protection Test," and L. N. Ellis, Ph.D., "Experimental Evidence of an additional Substance Essential to Mammalian Nutrition." Drs. Soma Weiss, Boston, and Hugo Roesler, Philadelphia, addressed the committee on cardiac clinics of the heart committee of the New York Tuberculosis and Health Association at a meeting of the New York Academy of Medicine, on the "The Role of the Precipitation Aspects of Cardiovascular Disease," respectively.—Dr. Leonard G. Rowntree, Philadelphia, addressed the Medical Society of the County of Kings, on "Recent Advances in our Knowledge of Endocrine Diseases," and Dr. John L. Bauer delivered his inaugural address as president of the society, on "Medical Problems."—Dr. Louise D. Larimore and Walter C. A. Steffen, among others, addressed the Queensboro Surgical Society, on "Carcinoma of the Breast Pathology and Review of Cases" and "Congenital Pyloric Stenosis," respectively.—Dr. Russell L. Cecil delivered an afternoon lecture before the Medical Society of the County of Queens, Forest Hills, on rheumatic fever.

# Medicolegal

By LORENZ J. BROSNAN, ESQ.  
Counsel, Medical Society of the State of New York

## CONTRACTS—AGREEMENTS BETWEEN PHYSICIANS LIMITING PRACTICE

Frequently doctors have made agreements with other members of their profession to refrain from the practice of medicine in a particular locality, and from such contracts a number of interesting court rulings have resulted.

A few months ago a high Court was called upon to test out the validity of such a restraint dealing with a contract restricting a certain doctor's practice of medicine in Chicago. Two physicians, Dr. S. and Dr. B., had been engaged in practice for some time under a partnership agreement. Advances had been made to Dr. B. in excess of his share of the partnership funds. Dr. S. became ill and inactive in practice and it was agreed that the partnership should be dissolved. A contract was therefore entered into between the two doctors whereby Dr. B. was to pay Dr. S. the sum of \$7,500—payable \$3,000 in cash and the balance within two years. Dr. B. was also to pay to his former partner the additional sums of \$125 every month for two years and \$100 every month thereafter for the balance of the life of Dr. S. In consideration of the winding-up of the partnership and of the premises, the following clause was included in the contract:

"It is specifically understood and agreed that Dr. S. agrees not to engage in the practice of medicine independently of Dr. B. in Chicago, and that when he returns to active practice with Dr. B. additional compensation shall be mutually agreed to."

After some months Dr. S. instituted a lawsuit against Dr. B. based upon the alleged failure of his former partner to make the monthly payments under the agreement. The defendant claimed in defense of the case that the contract was void, and unenforceable, asserting that it was against public policy because it restrained a doctor from practicing his profession in Chicago for an unlimited time. The trial court, however, gave judgment for the plaintiff. An appeal was taken and the judgment was affirmed by the Appellate Court which thereby sustained the validity of the contract. In ruling that the restraints which Dr. S. had assumed under the contract were valid the Court said:

"The question whether the restriction upon the right of Dr. S. to practice his profession, as made by the contract, is unreasonable is one of law, to be determined under the particular facts of this case. It is to be noted that the

reason Dr. S. retired from the practice of his profession was, as recited in the contract, because of his inactivity due to a protracted illness; that by the contract he is not restrained from practicing his profession at any place in the state outside the city of Chicago; and that as to the city of Chicago the restraint upon Dr. S. is not total but only that he will not practice his profession independently of Dr. B. The contract is supported by a valuable consideration, the restraint imposed is limited or partial, and we do not regard the restraint to be greater than is reasonably necessary to protect the contract rights of Dr. B. or to be against public policy."

In a somewhat different situation recently decided in another of the Midwestern States, injunctive relief was granted by the Court to enforce a similar contract. In that case the plaintiff was a physician who had for many years engaged in his profession in the City of A. He made an agreement with a younger man who had been licensed to practice for only about a year whereby the older man undertook to furnish offices to be shared by the two men in a joint practice. The younger man was to pay over to the older 30 per cent of his fees. The venture was to last for one year, and it was further contracted between them that as a partial consideration for the arrangement, the younger man agreed that if at the end of the year he should sever relations with the older man, he would not for a period of three years thereafter engage in the practice of medicine in the city of A. in opposition to the other. The two men worked together for a year, severed relations, and promptly the younger man opened an office in the same town. The older man sued to enjoin the younger from so practicing.

The Appellate Court in that case sustained the plaintiff's right to the relief he sought, and said in its opinion:

"The appellant, a young man and comparatively inexperienced practitioner, with no previous residence in the City of A., was, under the contract taken into the offices of the appellee, an old and established practitioner. It inevitably followed that the appellant became acquainted with the patients of the appellee and was in such a situation that it is quite reasonable to expect that in the course of time some of them might prefer the services of the appellant. To permit the appellant to

leave the offices of the appellee and establish a competing office in the same town in direct derogation of the terms and provision of the written contract, and require the appellee to resort to a court of law to prove the specific damages that he might suffer by the loss of patients who sought the services of the appellant in preference to those of the appellee and deny equitable relief would be to place a very serious limitation upon the general broad and plenary powers that rest in a court of chancery."

These cases seem to be in accord with the rule laid down by the Courts of this State years ago. The principal case upon the subject in New York seems to be one in which years ago a doctor desirous of practicing in a certain community bought from another practitioner a house and lot, "some office furniture, and his ride and good will." The physician so selling his office agreed in consideration for the sale never to practice medicine within the same County, one of the upstate counties. Within four years, however, he did return to the County to practice, and suit was started to enjoin him from so doing. In his defense he claimed that the contract was void on the grounds that it was (a) unreasonable, (b) in restraint of trade, and (c) against public policy. In that case the Court said in upholding the terms of the contract:

"That an agreement in general restraint of trade is utterly void was decided at least a century and a half ago and has been the unquestionable law ever since, but the very case which settled this doctrine irrevocably, also held that a promise to restrain one's self from trading in a particular place or within a limited district, if made upon reasonable consideration, is good. The only inquiries to be made, therefore, to determine the validity of a contract restraining the exercise of a trade or profession, are, first, whether the restraint is partial, second, whether it is upon an adequate or merely colorable consideration; and third, whether it is reasonable. Without attempting to exhaust the learning upon this topic with which the books abound I propose to examine very briefly the contract in this case, in view of these principles and by the light of a few authorities bearing upon them. And in the first place the restraint imposed in this case is doubtless a partial one. A general restraint is in England defined to be one which forbids a person from

employing his talents, industry or capital in any undertaking within the Kingdom; but individual interest and general convenience render engagements not to carry on a trade or act in a profession in a particular place proper. Such special restraints as to places and districts of country have been frequently upheld in England and in this country, as we shall see more particularly when we come to the consideration of the reasonableness of the restraints which are sought to be upheld. In this country, therefore, it may perhaps safely be assumed that, by analogy, any restraint that embraced within its scope the territory of the State would be general and therefore void; while a local and limited territorial restraint is partial, and if not unreasonable is valid . . .

"I am unable to say that the County of O. either as to extent of territory or the amount of its population, constitutes so wide a field as to make the restriction which the defendant imposed upon himself by his contract in this case an unreasonable one. A fair consideration was paid by the plaintiff for the privilege purchased by him and I cannot say that the restraint is larger or wider than his protection may possibly require."

Among other such contracts that have been passed upon and sustained as enforceable by the Courts of New York are the following:

1. A contract selling a piece of real estate, and the vendor's practice as a physician and surgeon in a certain village, in connection with which the vendor agreed not to locate himself and practice within six miles of said village for ten years, with a provision that if he did so locate or practice he would pay to the purchaser \$500 on demand for every month he practiced in violation of the agreement.

2. An agreement for the sale to a former partner of office equipment, in connection with which the vendor bound himself to pay \$500 as liquidated damages if he should within five years' practice in the village or town in which the office was located.

3. A contract made between two dentists whereby one purchased the good will and business of the other and obtained his agreement not to reenter for five years the practice of dentistry within the territory bounded by the Harlem River on the North, Seventieth Street on the South, the East River on the East and the North River on the West.

# Books Reviewed

The History and Epidemiology of Syphilis.—By William Allen Pusey, M.D. Octavo of 113 pages, illustrated. Springfield, Ill., Charles C. Thomas, 1933. Cloth, \$2.00.

This book gives in a very comprehensive manner all the known facts concerning the history of Syphilis and reaches the conclusion that Syphilis originated in the new world and was carried back to Europe by Columbus. After brief biographical sketches of the outstanding workers and their contributions in this field of medicine, the author devotes a chapter to the epidemiology of Syphilis and states that the number of new cases of Syphilis per year is about stationary (in the United States, at least) and that very little is being accomplished toward its ultimate eradication. Altogether this volume is a fitting companion to Dr. Pusey's earlier work on "The History of Dermatology." It is a well worth while addition to any physician's library.

JOHN C. GRAHAM.

Physical Chemistry of Living Tissues and Life Processes.—As Studied by Artificial Imitation of their Single Phases. By R. Beutner, M.D. Octavo of 337 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1933. Cloth, \$5.00.

The title of this book is interesting, and stimulates the hope that the author has gathered into a small place much of the knowledge concerning the basic principles of chemical activity in living matter. The hope is fully justified, and in an understandable way to anyone with even a modern knowledge of chemistry. All physicians interested in the chemistry of the body will find helpful information clearly presented.

The medical books of the future will contain much data of the type mentioned in this book, and plans of treatment will be instituted to restore disordered chemical reactions to their normal status. The foreground of this method is given in this work, and some of the mystery that surrounds the actions and reactions of living matter is clearly dispelled by the author.

It is impossible to have a thorough appreciation of sickness today without much of the knowledge contained in this book, and the reviewer hopes that in the future many similar ones will be published.

J. ARTHUR BUCHANAN.

Handbuch der Allgemeinen Hämatologie.—Band II, Hälfte I. Herausgegeben von Dr. Hans Hirschfeld und Dr. Anton Hittmair. Large Octavo of 700 pages, illustrated. Berlin, Urban & Schwarzenberg, 1933. Paper RM. 50.

As the editors state, this "Hand Book of General Hematology," of which the present part is the first half of the second volume, is devoted to the "technic of methods of investigation."

They have purposely omitted chemical, chemical-physical, physical and serological methods, to avoid consuming too much space and adding too much to the cost of the book.

There are twenty-three topics, treated by eleven different contributors; seven hundred pages of text and two hundred and sixty-nine illustrations. Space prohibits more than a very general review of what is really a massive work on a rapidly growing subject. The book is well illustrated and teeming with methods, old and new. For laboratories and those aiming to specialize on hematology, the work is valuable as a practical guide to technique and a work of reference; for casual workers on the blood it is too exhaustive. It should be in all laboratories and A-Grade Hospitals.

J. M. VAN COTT.

The Diseases of Infants and Children.—By J. P. Crozer Griffiths, M.D., and A. Graeme Mitchell, M.D. Octavo of 1155 pages, illustrated. Philadelphia, W. B. Saunders Company, 1933. Cloth, \$10.00.

While this is the third edition of the Diseases of Infants and Children, and the construction of the book is much the same as in previous editions, the limitation to one volume with the elimination and additions necessary for this step, have really resulted in a new work. We believe that the purpose has been well fulfilled in that it is a text-book suitable for undergraduates and for physicians especially interested in pediatric subjects.

The printing and the paper are good which make for easy reading, and the illustrations are above the average. About 19 colored plates increase the interest.

Most of the subjects are brought up to date, but the treatment of chorea makes no mention of the newer shock methods such as nirvanol and typhoid vaccine.

It is a satisfying book to refer to, and is well worth a place on the shelf of the physician who deals with children.

ARCHIBALD D. SMITH.

Le Nystagmus Vestibulaire et les Reactions de Mouvements.—By R. Clauue. 12mo. of 64 pages, illustrated. Paris, Nobert Maloine, 1933.

Read before the Section on Medicine at the Annual Meeting of the Medical Society of the State of New York, at New York City, April 4, 1933.

Vestibular tests seem to play an obscure role in the routine work of most ear specialists. This may in part be attributed to the fact that we have adopted too many methods without concentrating on a particular standardized procedure. As to the difficulties entailed in each of these tests the otologist is well familiar.

This little book (in French) attacks the rotary test as unreliable because it excites both labyrinths, is subject to wide variations, and because it cannot be tried out on a sick patient.

The author focusses his attention, however, on one test—the Caloric Test—which he describes in simple convincing terms, and by means of schematic drawings discusses its important practical applications.

EMANUEL KRIMSKY.



**SURGERY ON THE PATIENT WITH DIABETES MELLITUS**

By BEVERLY CHEW SMITH, M.D.

*Assistant Visiting Surgeon, Presbyterian Hospital, New York City*

Read at the annual meeting of the Medical Society of the State of New York, New York, N. Y. April 5 1933

The title of this paper presupposes the established diagnosis of diabetes mellitus. This diagnosis is frequently made by routine urinalysis in patients ignorant of the presence of the disease. Occasionally, multiple urinalyses are necessary to discover glycosuria, because patients with a moderate hyperglycemia may not constantly show glucose in their urine. If a wound fails to heal properly with adequate surgical treatment, diabetes should be suspected, and if urine is negative for glucose, a fasting blood sugar test should be done to determine a hyperglycemia.

The medical treatment of diabetes has become so proficient, that a diabetic can be treated surgically almost as a nondiabetic patient. This statement has been made before, and is largely true, but there are certain details in the treatment of surgical diabetics which must be meticulously executed to secure the same results one would expect in nondiabetics, with a similar lesion. Inflammatory lesions in diabetics are aggravated by hyperglycemia. Infection diminishes diabetics' carbohydrate tolerance. Their tissues are more susceptible to dressing trauma. Inflammatory lesions are best healed by adequate drainage and reduction of hyperglycemia. The clinical course following guillotine amputations of gangrenous extremities in septic diabetics vividly illustrates this statement. Diabetics are particularly susceptible to infections in their toes and feet following the cutting of corns and calluses. These injuries often lead to gangrene, with or without infection, depending upon the amount of arterial blood supply. The sequence of infections from closed spaces of digits such as cellulitis, abscesses, thrombophlebitis, arterial thrombosis, suppurative arthritis, osteomyelitis, and suppurative tenosynovitis, should be anticipated and clearly comprehended.

The separation of patients from infection in parts which need not, or cannot be imputed, necessitates an understanding of anatomical spaces, principles of adequate and maintained surgical drainage and a realization of the difficulties of securing such drainage.

At the Presbyterian Hospital, in 1930, the Director of Surgery, Dr. Allen O. Whipple, set aside eight beds for the treatment of surgical diabetic patients. During the past three years we have treated 172 surgical diabetics in these eight beds.

TABLE I\*

	Total medical and surgical admissions	Surgical diabetic admissions	Total surgical admissions	Total medical and surgical admissions
1930	315	59 (18.7%)	4800 (1.2%)	6479 (0.9%)
1931	265	40 (15.1%)	4679 (0.8%)	6345 (0.6%)
1932	235	73 (31.0%)	5251 (1.39%)	7012 (1.3%)

\* Gynecology and other specialties are not included in the total admission figures.

The concentration of surgical diabetic admissions on a service has enabled us to decrease the mortality in this group. Where we previously amputated above the knee for arteriosclerotic diabetic gangrene, we now amputate below the knee. The results have taught us a continuation of conservatism as compared to more radical attitudes in other clinics. The mortality in 50 diabetic amputations of the leg and thigh from 1916 to 1927 was 46 per cent. The mortality in 29 amputations in 1930, 1931, and 1932 was 37.9 per cent. For the past three years on the Second Surgical Division at Presbyterian Hospital, there has not been an amputation through the thigh for diabetic arteriosclerotic gangrene except for gas bacillus infection. I believe that thigh amputations for gangrene in diabetics with arteriosclerosis is in a great many instances more radical than is necessary. If amputation is properly performed at the site of election below the knee, and care exercised

with drainage, dressings, and medical supervision, there should be fewer extremities needlessly sacrificed through the thigh.

In the routine care of diabetics, we attempt to simplify the necessary laboratory observations. If urine shows glucose, it is examined for diacetic acid with ferric chloride. If this is negative,  $\text{CO}_2$  combining power of the plasma is not done unless there is clinical suspicion of acidosis. If the ferric chloride is positive, we do a  $\text{CO}_2$ . Ferric chloride reaction may be negative in the urine of dehydrated diabetics who show clinical signs of acidosis, and yet become positive if sufficient fluid is given to wash acid bodies out of the blood and tissues.

Should impending acidosis be noted, treatment is immediately begun by a medical attending physician. It consists briefly in the administration of orange juice, using 100 c.c. as equivalent to 10 gm. of glucose, and if patients are unable to drink fluids, glucose is administered by clysis or intravenously. Insulin, ( $\frac{1}{2}$  unit per gram of glucose) is given fifteen minutes before, and fifteen minutes after clyses or infusions. Voided or catheterized specimens are examined every one to two hours. Cases of severe acidosis or coma receive larger doses of insulin for each gram of glucose. Normal saline is administered by clysis or intravenously to combat dehydration without placing too great a burden on the circulatory system. In elderly diabetics, because of arteriosclerosis and myocarditis, about 2,500 c.c. in twenty-four hours is near the limit of safety. In younger patients with unimpaired vascular system, it may be raised to 6,000 to 8,000 c.c. in twenty-four hours.

We prefer not to give insulin intravenously unless it becomes necessary for the prevention of coma. Glucose given with it is excreted faster than insulin is utilized. The concentration of insulin in the blood and tissues may therefore be accumulative and produce shock.

The House Staff is instructed to watch for symptoms of insulin shock. If there is suspicion of it, we insist upon an immediate blood sugar test, and either orange juice by mouth, or 5 or 10 per cent of glucose is given intravenously. Diabetics are so prone to cardiac attacks, with symptoms simulating insulin shock, that the true condition may not be determined until the blood sugar is known. It is safer to produce temporary hyperglycemia than to allow patient to sink into insulin shock.

For treatment of glycosuria and regulation of insulin, we rely at first more upon urinalysis than upon blood sugar determinations. Each

voiding is examined for glucose. Ten units of insulin are given for a heavy reduction, and 5 units for a slight reduction of Benedict solution. A standing order of insulin may be further necessary in one, two, or three doses. A blood sugar test should be done when the urine becomes negative or when it does not become negative after a period of treatment, when there is a rise of temperature, a spread of a localized infection, or a maintained pyrexia. Conversely, an increased urinary or blood sugar indicates a spread of any existing infection.

**WE DO NOT STARVE PATIENTS.**—Diets are simplified into three types as follows:

(1)	150 gm. of carbohydrate	75 gm. of protein
	100 gm. of fat (for undernourished patients)	
(2)	100 gm. of carbohydrate	60 gm. of protein
	50 gm. of fat (for the average patient)	
(3)	50 gm. of carbohydrate	50 gm. of protein
	50 gm. of fat (for obese patients)	

Thus equipped with a urinalysis outfit, dietary list of three diets, and insulin, and an occasional blood sugar test, we believe that the average surgical diabetic can be successfully cared for. In cases of severe acidosis, however, complete laboratory facilities are useful.

The ideal toward which we strive in the treatment of surgical diabetics is the maintenance of a normal blood sugar regardless of the paucity of diet, or the amount of insulin. Like all ideals, this one is not always attainable because of infection which in all cases enhances the severity of the diabetes. Observation of diabetic wounds indicates that they heal better in the presence of a normal blood sugar. This necessitates daily or several times daily observation by the medical attendant.

I vividly recall surgical cases, whose wounds were satisfactorily healing with their blood sugar controlled by insulin and diet, who, when referred back to their medical doctor, or even to a medical service in a hospital, have had their blood sugar raised in an effort to increase their nutrition by giving a high CO H diet with a moderate increase of their insulin with the result that a hyperglycemia occurred, and their wounds either suppurated more, or became sluggish to the extent of serious retardation of their healing.

It is most comforting to have the advice of a medical confrere in estimating the cardiovascular renal competency of surgical diabetics. It is frequently difficult to discover and evaluate existing pathology of the myocardium, coronary vessels, systemic blood vessels, and kidneys. In spite of laboratory examinations

including blood chemistry, renal tests, electrocardiographs, x-rays and the like, we have so often seen unexpected serious cardiac complications following the extra burden of operation in the presence of inflammation or from the operative trauma itself, that we feel a guarded prognosis is particularly advisable in elderly or long existent diabetic cases.

Routine eye examinations have revealed diabetic retinitis in every case of diabetic gangrene of the toes or feet.

Diabetics are susceptible to any surgical disease that nondiabetics might acquire. They are particularly susceptible to infections in the lower extremities (terminating in gangrene), and in the skin (terminating in carbuncles). A surgically supervised foot clinic in charge of a competent pediatricist has been a valuable adjunct to the Surgical Diabetic Clinic for prophylactic treatment of corns and calluses.

The absence of osteomyelitis in diabetics, except in digits, has been noticeable in our cases. This is probably coincident.

Carcinomata of the stomach, breast, colon and rectum have been encountered. In these cases, diabetes has added tremendously to the mortality of surgical therapy.

In appendicitis with localized peritonitis, diabetes has not been the serious factor that it has been in the more advanced cases of peritonitis. Often we have found it necessary to delay surgery in the presence of extensive peritonitis to treat the accompanying acidosis. Surgical delay has not been so necessary in cases of appendicitis with localized peritonitis. A clysis with insulin either before, or after, or both, usually suffices.

We have seen so many acute and chronic cholecystitis cases with and without stones in the gallbladder and common duct pass successfully through operative procedures and convalescence, that we expect their recovery as in nondiabetics, provided cardiovascular complications do not intervene.

In acute cholecystitis, the diabetics' glucose tolerance is greatly diminished and we are inclined to do cholecystostomies rather than cholecystectomies. Diabetes is easier controlled if acute gallbladders are drained and not removed. Later they may be removed, if necessary, in the absence of acute infection. We are more inclined to operate on acute gallbladders in diabetics earlier than we do in nondiabetics.

We believe that adequate drainage is advisable in these cases, bearing in mind that

too tight an abdominal wall closure about the drains may defeat our purpose.

Infections of the pleura and lung abscesses have been amenable to surgical drainage with appropriate treatment of their diabetes.

Paronychia, abrasions, and slight puncture wounds may be harbingers of a prolonged hospitalization, amputation, or may even lead to death. The best treatment of such extremity lesions is, first, their prophylaxis, and secondly, adequate surgical treatment immediately following their inception.

It is dangerous to amputate toes when the dorsalis pedis artery is not palpable. However, if there is evidence of a generous collateral circulation in the foot and toes as shown by high surface temperature readings, toe amputations may be done, but the site often will not heal, and sepsis may develop.

Many clinics teach that it is unwise to amputate through the leg when the popliteal artery is not palpable. I have often amputated through the leg when I have been unable to feel the popliteal. In some cases I had primary union. In others where the stumps were left open, the healing was slow and had to be supplemented by either Thiersch or pinch grafts. In no case was reamputation through the thigh necessary because of gangrene of the leg stump. In 2 cases gas bacillus infections required thigh reamputations. Both of these cases died.

It is difficult to palpate the popliteal artery. I do so by rolling it laterally against the lateral head of the gastrocnemius muscle in the popliteal space with the knee slightly flexed. I have often noted spurting from a divided popliteal artery that I could not palpate before amputation.

Oscillometric readings indicating pulsation in peripheral vessels and surface temperatures as determined with a dermaterm indicating collateral circulation, have helped in determining the level at which the blood supply could maintain a viable stump. I have amputated through the junction of the lower and middle third of the leg where there was practically no bleeding from the anterior and posterior tibial, or peroneal arteries, and have had union. The surface temperatures at the amputation site were close to normal (30.5° C.). These stumps have required longer to heal than tissues with a better blood supply, but they have remained healed during the one to three years they have been followed up.

Since 1930, I have used a technic which I developed and which will be published in *The*

*Archives of Surgery* under the title of "An Amputation Through the Lower Third of the Leg in Diabetic and Arteriosclerotic Gangrene." This operation embodies the minimal trauma to existing collateral circulation, excision of the bones from the investing muscles, and a guillotine of the soft parts at a sufficient distance from the bone ends, to leave a stump of tissue 2 to 3 inches long, covering the bones after shrinkage has taken place.

#### ANESTHESIA

Ether is not used because it either produces or exacerbates acidosis in diabetics. Spinal anesthesia is frequently used in abdominal work and only occasionally in amputations. We prefer a spinal puncture between the third and fourth lumbar vertebrae to collect 2 to 3 c.c. of spinal fluid in a vial containing 100 to 200 mg. of novocaine, dissolving the drug in the spinal fluid, and slowly reintroducing the solution in the spinal canal. In hypertension cases the fall of blood pressure may be so great that a suppression of urine may ensue. Fifty milligrams of ephedrine intramuscularly one-half hour before or at the time spinal anesthesia is given will usually maintain blood pressure. Other complications following spinal anesthesia are: Circulatory collapse of undetermined origin, persistent headaches, inability to void, transient paralyses and pulmonary complications. These, however, may follow its use in non-diabetics, but have occurred more frequently in the diabetic as compared to the nondiabetic group. We do not feel justified in using spinal anesthesia for toe or leg amputations unless pulmonary complications contra-indicate a short nitrous oxide-oxygen anesthesia. Spinal anesthesia is particularly useful in intra-abdominal surgery unless more than one to one and one-half hours is needed to complete the procedure. The relaxation and exposure that it permits often materially shorten the operation.

Ethylene has not been used at the Presbyterian Hospital in any case for the past five years because of its explosive dangers.

Infiltration novocaine is useful in non-inflammatory lesions. In the presence of infection it is not used unless there are contra-indications to a general anesthetic. I have occasionally used it for leg amputations in cases with acute pulmonary complications.

Avertin is not used in diabetics because of its depressing effect on blood pressure. It has not been shown to have any direct effect upon diabetes.

Nitrous oxide and oxygen is the anesthetic of choice in our hands for amputation of toes, legs, thighs, incisions and drainage of infected parts, breast operations, plastic procedures, and to supplement spinal.

An analysis of the 59 surgical diabetic admissions to Presbyterian Hospital in 1930 revealed the following. They represented fifteen nationalities; 42 cases were in the sixth and seventh decades, 16 knew they had diabetes from one to five years, 14, five to ten years, 8 ten to fifteen years, 3, fifteen to twenty years. Fourteen were uncertain as to the duration of their diabetes.

Duration of present illnesses varied from two days in a few cases to two years in 4 cases. In 15 cases it was two to five months.

Thirteen and one-half per cent gave a family history of diabetes. Thirty per cent did not know of the presence or absence of this disease in their family. Fifty-six per cent denied its presence in their family.

That arteriosclerosis associated with diabetes is not always accompanied by hypertension is shown by the fact that the systolic blood pressure in 27 was between 100 and 150. In 17, between 150 and 180, and in only 12 was it between 180 and 210.

Sixteen per cent had a blood urea above normal upon admission (*i.e.*, above 0.4 gm. per liter).

No surgical case was admitted in coma, but several showed severe acidosis. Thirty-five patients had a blood sugar between 2 and 3 gm. per liter preoperatively. Forty-six had a recorded blood sugar below 2 gm. per liter on discharge. Blood cultures were taken nine times. Two were positive, one grew a non-hemolytic streptococcus, the other a hemolytic *Staphylococcus aureus*. Both these patients died. Thirty-three per cent of the cases showed x-ray evidence of calcification in their peripheral vessels.

There were 7 hospital deaths, a hospital mortality of 11.8 per cent. Five others died within two years following their discharge from complications of diabetes.

These figures vividly illustrate the futility of statistics, as in 1930 and 1931, with a mortality of 25 per cent in the leg amputation group, we certainly did not encounter as severe or as frequent complications as we did in 1932 with a mortality of 62.5 per cent.

Because of our experience in 1932 with such a high evidence of gas bacillus infections, we now routinely culture all open lesions aerobically and anaerobically before any operation, so as to know the bacteriology we are

dealing with. If gas forming bacilli are present, we give a prophylactic dose of polyvalent serum (Lederle) before operation and treat either the local wound until gas bacilli can no longer be recovered and then proceed with a leg amputation, leaving the stump open and dakinizing it freely, or else proceed immediately with a thigh amputation and leave the stump entirely open and dakinize it.

A black dry gangrenous digit may harbor at its line of demarcation either a streptococcus, which does or does not form gas or another gas forming organism which at any given moment, usually associated with some mild trauma, may overwhelm its host and produce a septicemia.

TABLE II

1930	
Amputation through leg	25 per cent
Amputation through thigh	50 per cent
Griffith Stokes	27.2 per cent

Two deaths following amputation through leg were due to sepsis. The death following the Griffith Stokes occurred in a patient 72 years old from pneumonia cerebral thrombosis, decubitus cystitis and pulmonary embolus.

1931	
Amputation through leg	3
Amputation through thigh	0
Griffith Stokes	0
Total amputations—4	3
Hospital mortality	25 per cent

1932	
Amputation through leg	62.5 per cent
Amputation through thigh	33.3 per cent
Griffith Stokes	50 per cent

The five deaths following amputations through the leg were due to sepsis. One case senility and pneumonia. Three cases gas bacillus infection. The deaths following thigh amputations were from coronary occlusion and gas bacillus infection.

In 50 surgical diabetic amputations between 1916 and 1927 at Presbyterian Hospital, the hospital mortality was 46 per cent. There were 3 amputations done in the lower third of the leg as compared to 20 through the leg of 20 amputations in 1930, 1931, and 1932.

The hospital mortality was reduced in 1930 to 27.2 per cent, in 1931 to 25 per cent and in 1932 it rose to 50 per cent. An average of three years—1930, 1931, 1932—revealed a hospital mortality of 37.9 per cent.

It is thus with statistics. Principles of treatment are rarely found therein. They are discovered by actual case observations. Each surgical diabetic is a clinical entity unto itself, and before therapy is instituted a sum-

mation of the extent of their local and systemic pathology and the amount of surgical operative interference each will stand is imperative for their proper treatment.

TABLE III

	Number of surgical diabetics	Total hospital charges	Total paid by patients	Deficit to hospital	Average cost per patient to hospital
1930	59	\$11,266.45	\$4,904.19	\$6,362.26	\$107.83
1931	40	\$7,109.19	\$3,879.67	\$3,229.52	\$80.75
1932	73	\$17,874.82	\$6,030.98	\$11,843.84	\$93.06
Total		\$31,250.46	\$14,814.84	\$16,435.62	\$95.27

The 172 surgical diabetic admissions to Presbyterian Hospital in 1930, 1931, and 1932 cost the hospital \$95.27 each.

## CONCLUSION

(1) Segregation of surgical diabetics, and the relegation of their care to one or a group of surgeons with the constant and daily supervision of a medical attendant has permitted the clinic at Presbyterian Hospital to simplify the care of these patients and obtain a reduced mortality in the group as a whole, and particularly in the amputation group.

(2) We have simplified routine laboratory investigations to the necessary minimum, and have shown patients, the House Staff and nursing personnel, that which can be accomplished in the treatment of surgical diabetics in the hospital without the use of extensive laboratory facilities.

(3) The value of prophylactic treatment of extremities, calluses, corns, the skin, abrasions, contusions, or puncture wounds in diabetics, is strongly emphasized. If a minor surgical lesion would immediately receive the intensive treatment it deserves, there would be fewer life threatening, major surgical conditions requiring prolonged hospitalization and extensive surgery. The number of extremity infections eventually coming to amputation which began with cutting a callus is still startling.

(4) Surgical diabetics are increasing because, with the decrease of corns, and the increased average longevity given this group by insulin, more diabetics reach the decades of life in which the natural pathology of their age, plus their diabetes, exposes them to complications requiring surgery. Unfortunately, there has been no noticeable decrease in arteriosclerosis in diabetics.

(5) A distinct surgical diabetic follow up clinic is necessary for a proper evaluation of previous and future instructions.

## SURGERY IN THE PATIENT PRESENTING THYROID DISEASE

By RODERICK V. GRACE, M.D., and CARNES WEEKS, M.D.

*New York City*

Read at the Annual Meeting of the Medical Society of the State of New York, April 5, 1933, New York, N. Y.

When hyperthyroidism is present at the same time as any other surgical condition, we believe that hyperthyroidism is the more urgent and important condition and should always have surgical relief first. Until the thyroid patient has had this condition corrected by operation, no other surgical procedure can be carried out on him with any degree of safety. Although in recent years that destructive group of symptoms known as the thyroid storm or crisis has been seen less frequently, it occurs often in its overwhelming form when surgery is carried out on any patient before the accompanying hyperthyroidism has been corrected. The postoperative symptom complex which occurs in these patients may not be recognized early enough for effective treatment if the patient's history or physical examination have not previously indicated that hyperthyroidism has been present. Even when the condition is recognized, the usual therapy may be ineffective and the patient overwhelmed by the symptoms of thyrotoxicosis. While one learns from scattered sources, details of the unfortunate results in cases in which other surgical procedures have been attempted on patients with hyperthyroidism, the literature on this subject is extremely sparse.

Andrews, Greene<sup>1</sup>, Goodrich<sup>2</sup>, and C. Mayo, 2nd, have variously discussed it. We believe that it warrants further emphasis and wish to add personal observations based on 16 cases. This group consists of 7 cases of our own and 9 cases of other surgeons who have thoughtfully placed their data at our disposal.

In three of these 16 thyroid patients, minor surgical procedures had been carried out. These surgical treatments were, respectively: the extraction of a tooth; incision of a paronychia; and the excision of a sebaceous cyst under local anesthesia. In each instance there was a marked aggravation of the coexisting thyroidism. These reactions were from a mild to a very severe degree. Fortunately, in none of these cases did a fatality result.

That death may occur under such minor surgical procedure has been indicated by

Greene who recently reported on "fatal thyrotoxicosis occurring after an injection for varicose veins." One undertakes, therefore, even a minor surgical procedure in the presence of thyroidism with considerable risk. There are emergency circumstances under which minor surgery has to be carried out. Under these conditions the surgeon may expect a thyroid reaction of varying degree and should be prepared to institute early and effective therapy to combat it. The therapy of these cases will be discussed later in this paper.

The remaining 13 patients were subjected to what might be classed as major surgical operations. In 4 of these, the operation could not be deferred being of an emergency nature. The acute surgical conditions demanding operation in these patients were as follows: acute appendicitis; perinephritic abscess; acute intestinal obstruction due to a peritoneal band; and rupture of the spleen. The other major surgical conditions for which these patients were treated were of a chronic nature. This chronic group of cases showed respectively: inguinal hernia; gallbladder disease; fibromyomata of the uterus; carcinoma of the breast; and rectal polyps. In this series of 13 major operative cases there were 5 deaths following operation. Death in all of them was evidently due to an aggravation of the previously existing hyperthyroid symptoms. These symptoms increased rapidly after operation. In 3 of these cases, death occurred in eighteen to sixty hours postoperatively, in a characteristic thyroid storm. The condition was of such an acute nature that the patients were overwhelmed by the rapid increase in their symptoms of hyperthyroidism that had previously been present in a more quiescent degree. The clinical picture was marked by an acute progressive rise in temperature and pulse, out of proportion to what the surgeon may have expected in view of the operative procedures which had been carried out. In these fatal cases, the symptoms were uncontrollable from their onset. Restlessness and great emotional instability, were also very prominent symptoms to be succeeded by exhaustion, coma, and death. Iodine was the apparent need of these patients, but failure to recognize the postoperative reaction as

thyroid crisis caused its omission. Iodine given intravenously might have succeeded in lessening or abating this condition. It is the method of therapy in which favorable results have been reported by others in postoperative thyroid crisis. We wish to cite the experience of Goodrich<sup>2</sup> and Cuniffe<sup>3</sup> in meeting this condition. Goodrich mentions 2 cases in which the thyroid storm was controlled by the use of sodium iodide intravenously at a time when all methods of iodine administration had failed to give relief and when the patients' symptoms of hyperthyroidism had progressed until fatalities seemed probable. The prompt and dramatic effect of this method of giving iodine under these circumstances recommends it as the method to be followed. The following is a quotation from the Goodrich report:

The first twenty-four hours after operation were uneventful. Thereafter ensued the typical postoperative complications with rising pulse, rising temperature, persistent and increasing nervousness and anxiety, dyspnea, and after thirty-six hours an evident failure in circulation. Lugol's solution was increased in dosage. Fluids were given by hypodermoclyses. Glucose was introduced intravenously in doses of 250 cc. of a 10 per cent solution. Restlessness was treated by morphine. Seventy-two hours after operation the patient seemed moribund with livid countenance, pulse 180, respiration 36, tremor constant and restlessness and anxiety with prostration for supremacy. Drs. Frank B. Cross and Irving Cabot saw her in consultation. In view of the unanimous opinion of physicians and surgeons that the indicated remedy was iodine and because the Lugol's solution failed to meet this indication, sodium iodide solution, gr. 15, was given intravenously at first followed by a similar dose after three hours. In four hours, the enthusiastic house surgeon telephoned to me: "A miracle has happened! This woman looks almost well." Our next observation confirmed this impression. The patient was calm, comfortable, with better color and slower pulse. Two doses were given the two days following with recovery resulting."

Cuniffe reports the use of sodium iodide intravenously in a thyroid patient who needed an emergency operation for rupture of the spleen. He found that by giving the iodine by this method, he was able to diminish the expected postoperative hyperthyroid reaction, and prevent the occurrence of a crisis. In view of these reports and in the light of the possible ineffectiveness of iodine given by the usual methods, we consider that the severity of the postoperative reaction in these cases can be lessened and the crisis successfully met by the intravenous use of sodium iodide. This medication may be repeated at intervals until the pulse rate, temperature, restlessness and mental activity by their abatement indicate that the acute thyroidism is under control. When the thyroid crisis is passed or con-

trolled, the frequency of the intravenous medication may be diminished, or iodine may be given by some other method. While we have stressed the method of using iodine under these conditions, the other usual postoperative measures, such as forced fluids, glucose, sedatives, are also of great use in combating the thyrotoxicosis. I would like to report a resume of the case histories of several of the fatal crises.

(1) The patient, a woman of 44, was seen in consultation three weeks ago following an operation for the removal of a chronic gallbladder infection. The history obtained was that six days following the operation for cholecystectomy the patient developed an acute thyrotoxicosis. The family, when questioned later, said they had noticed a lump in the patient's neck accompanied by marked nervousness over a period of two years. The patient when seen was in extremis with a pulse of 110, vomiting, diarrhea, temperature of 102° to 103° F., marked dehydration and extremely apathetic. There was a small adenoma situated in the right lobe of the thyroid gland and a loud bruit was heard over both superior thyroid arteries. In spite of the institution of continuous intravenous glucose and saline accompanied by iodine in the form of Lugol's solution the patient died one week after our first visit and twenty-nine days following the original operation. Five days before the patient died a large dose of x-ray was given over the thyroid region in hopes that it might accomplish some benefit but it was without result.

This case illustrates the danger of doing major abdominal operations in the presence of toxic adenoma of the thyroid. In this case unfortunately, adequate measures to combat the thyrotoxicosis were not taken until too late.

(2) Patient Miss M. Q., age 41, was first seen in the early part of March 1926, her previous history had been entirely negative except that she had had symptoms of hyperthyroidism about two years ago. She was treated at that time by a specialist and was very much improved. She returned to work, had no further trouble, and had no recurrence of her symptoms. During the last few months she has experienced a desire for frequent urination, she had a very severe pain deep in the pelvis and said she felt as though something was being forced down between her legs when she walked for any distance. She also noticed a swelling in the lower part of her abdomen and a movable hard mass could be felt by palpation just above the pubes. A rectal examination showed a mass in the pelvis extending to the right side, but which was connected with the uterus. The diagnosis was fibroids of the uterus. Physical examination of the patient was negative, pulse and heart normal, and she was perfectly normal throughout except that a small hard adenoma in the left lobe of the thyroid could be felt. The basal metabolism test was plus seven. She was kept in bed for two weeks and the operation was then postponed for three more weeks, therefore she really had about five weeks' rest. She was then prepared for the operation in the ordinary way disregarding, of course, her previous thyroid history on account of her basal metabolism test and the negative findings in the physi-

cal examination. She was not given Lugol's solution or any other form of iodine preoperatively.

The operative procedure was done under gas-oxygen-ether anesthesia. The abdomen was opened in the median line below the umbilicus and a large tumor was found between the layers of the right broad ligament extending deep into the pelvis. Incision was made in the broad ligament and a large lobulated fibroid enucleated from the pelvis. It was attached to the right side of the uterus. There was very slight oozing from the tumor bed. The operation was easy of execution, and in order to get out of the abdomen quickly, the cavity from the tumor was lightly packed with gauze and the broad ligament was sewn high up to the peritoneum, shutting off the abdominal cavity of the tumor bed which contained the gauze. When we enucleated the tumor, which took a very short time, the anesthetist informed us that the patient was reacting very badly. The pulse rate was very rapid and he asked us to end the operation as soon as possible. A saline infusion was given at the time of the operation. There was no bleeding and no cause was found for this very great change in the patient. The patient was treated for shock with an infusion and morphine, the infusion being given in the operating room. Her temperature was 102 °F. about an hour after the operation and then gradually rose for three days until on the third day it reached almost 109 °F. Her pulse was fast and irregular, rising finally to 180. She developed classical symptoms of a thyrotoxicosis, became very restless, noisy, talkative, and irrational, fumbling and thrashing about the bed. She was treated by the ordinary methods of ice-bag to the head, cold sponges, infusions and a transfusion with the usual cardiac stimulation of digalen, caffeine sodium benzoate, and with morphine; nevertheless, the temperature continued to rise and on the third postoperative day the patient died of thyrotoxicosis. No iodine was in the treatment of this patient. Postmortem wound inspection revealed no signs of hemorrhage in the operation area.

In reviewing this case, iodine especially by the intravenous method might have been of the greatest value. This case also illustrates the dangers of operating on a relatively mild and previously treated case of hyperthyroidism.

(3) Patient, A. J., age 40, previous history: Ten years ago she was told by a physician that she had an abdominal tumor. She had three pregnancies; two children, 17 and 8, respectively. The third pregnancy resulted in an abortion three years ago. There was no history of tenderness or of bleeding. She had some symptoms due to perineal laceration. Patient was sent in as a case of fibroid of the uterus. For three months she has had some dyspnea, ophthalmia, and palpitation. There has been some general increase in the thyroid gland for the past sixteen years. On physical examination the patient appeared nervous. The thyroid was symmetrically enlarged and pulsating. There was an abdominal tumor the size of a grape fruit. X-ray examination of the chest showed the heart not to be enlarged. Electrocardiogram and kidney function tests were negative; basal metabolism 16 plus. A medical consultation was obtained, and the heart was reported adequate for operation. An operation was performed on March 20, 1926. A moderately difficult hysterectomy. The patient died on the second day after operation. The temperature ascended to 105° F. and to pulse rate to 150 and upward. The patient

had a rapid pulse during the operation. An autopsy showed colloid areas and adenomas of the thyroid. The abdomen showed no evidence of any complications resulting from the operation, such as hemorrhage or infection.

The significance of the patient's thyroid symptoms was not impressed upon the operator until it was too late to administer iodine therapy. The severity of the crisis and its rapid fulmination overwhelmed the patient very early.

The history of the fatal cases in this group show several very interesting points. In the first place, the patients' histories pointed to the fact that hyperthyroidism had been present for some time previous to the operation but that the condition was considered cured or controlled by conservative methods. These conservative methods were primarily those obtained by prolonged rest in bed and the use of iodine or x-ray therapy. They had been used either alone or in combination by the medical advisers of these patients. As a result, the patients felt themselves to be cured of their hyperthyroidism, and this opinion was also shared by their surgeons in view of the fact that the present symptoms of hyperthyroidism were of a relatively mild character. Previous treatment of these hyperthyroid patients may, therefore, have lulled their surgeons into a sense of security. The hazard of the thyroid crisis is potentially present in these patients, and surgical trauma may make it actual. Anesthesia, the operative and psychological shock, all play unfavorable parts in this connection. Wound exposure, prolonged handling of tissue, and hemorrhage also are factors of an unfavorable nature. Any of them may aggravate the preëxisting thyroidism in a serious way. All of them may offer a postoperative burden that too often ends in fatality.

One of the first observations that hyperthyroidism is manifesting itself unfavorably may be noted in these patients just previous to operation. At this time the patient may indicate by mental and motor activity as well as by a marked increase in pulse rate, the earliest manifestations of the crisis that is going to follow. Should a history of previous hyperthyroidism have been elicited, the patient could be protected by the use of iodine therapy. Later on it has been characteristically noted by the anesthetists that the quality and rapidity of the pulse rate in these patients has been out of proportion to the surgical procedure which was being carried out. The pulse rates in some of these simple surgical procedures have risen to as high as 150 to 180 a minute, seemingly without reason. At this time, too, the patient might be protected by



the use of iodine therapy intravenously. Therefore, in a patient who is a suspected hyperthyroid, either by history of physical examination, by the prevention of a crisis, or by the diminution of its severity, may be met before or during operation, and the use of the iodine at such a time would offer the patient an opportunity to escape the hazard of the acute thyroidism that is impending.

One of the fatal cases in our series had been treated previously over a long period with small doses of iodine. Following a severe operation he showed in a few hours the serious symptoms of hyperthyroidism culminating in a thyroid storm with death eighteen hours later. It is well known that thyroid patients who have been taking iodine over a long period develop a tolerance to it. Having become iodine-fixed, they fail to derive the benefit from its use at a time when they need it most. Such a patient offers a peculiar problem. The situation can arise in which acute appendicitis or a ruptured viscus, may occur in a previously iodized thyroid patient. The dilemma offered the surgeon is serious and the outcome apt to be unfortunate; however, it is met. At this time, therefore, we wish to emphasize that iodine when used in a form

other than as a preparation for operation increases often the unfavorable symptoms of hyperthyroidism and adds to the mortality.

#### CONCLUSIONS

In a group of 16 cases on whom other surgical operations were performed in the presence of coexisting hyperthyroidism, there were 5 deaths. This mortality of 30 per cent or more is high for any type of surgery. It can be diminished greatly by following out that surgical precept that is too often forgotten when any surgical condition coexists with hyperthyroidism. The thyroid condition demands primary surgical attention. This precept is to be violated only in the presence of such surgical conditions as demand emergency operation. Under such circumstances the surgeon should expect a marked aggravation of the preëxisting symptoms increasing possibly to a thyroid crisis, and must make early effort to combat these symptoms. Iodine intravenously, offers him an effective and sure method of therapy in certain of these cases.

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## SURGERY IN PATIENTS PRESENTING PULMONARY DISEASE

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In approaching the subject of how to manage best the surgical patient with accompanying pulmonary complications, two divisions appear at once. First, are we concerned with an acute respiratory infection? And, second, that group in which a further distinction must be made between those patients who undergo surgery in the presence of an already existent pulmonary condition, and those without previous trouble in whom, during their postsurgical convalescence, a respiratory infection appears. These two questions of such vital importance to the patient are always a source of concern and worry to every conscientious surgeon, and on the appreciation of them will depend his successful fulfillment of his obligation both to the patient and his profession.

I purposely omit mention of the surgery of pulmonary tuberculosis *per se* or of chronic

pulmonary suppuration, as I believe both of these fields are too narrow and specialized for the scope of this paper.

We know that the incidence of respiratory infection in our latitudes is highest from November to May. Some of us fail to bear in mind, however, that during this same period, particularly February to April, there is also a great increase in latent or potential respiratory infection. By that I mean that many persons in good health are transient carriers of pathogenic organisms in their upper respiratory tracts. Of these a hemolytic streptococcus is the most common, but in addition there are also potentially virulent pneumococci, staphylococci, influenza bacilli, and also the pathogenic anaerobes. Approaching the subject from another angle, that of wound infection, Meleney has clearly demonstrated this with reference to the hemolytic streptococcus. The same result can be shown by nose and throat cultures of ward patients, as

Rosenow and I found in the hospital at Fort Reilly in April, 1918. These observations are pertinent to all surgery during our winter months and cognizance of them will lessen our respiratory and septic complications in those whom we consider normal patients.

#### PREPARATION

**PREOPERATIVE.**—In the presence of an acute respiratory infection every one is agreed that all surgery should be avoided unless absolutely necessary. On the other hand, an emergency should be met fearlessly. In the case of an upper respiratory infection every effort should be made preoperatively to lessen the secretions and minimize the chance of spread during the operative procedure. This can be accomplished by the use of ephedrine in the nose, belladonna or atropine orally or hypodermically, and liberal swabbing of the throat with 2 or 4 per cent mercurochrome directly preceding operation. With the very ill patient, one with pneumonia for example, every effort must be spared the patient. The fluid supply of the body should be maintained. If fluids are contra-indicated by mouth they may be given by rectum or, if necessary, by a preoperative clysis or infusion. In the presence of pneumonia or with injury to the chest or lungs, owing to the temporary imbalance of the cardiorespiratory system, infusions should be administered in repeated small amounts or else by the continuous drop method, and transfusions of over 400 c.c. should be given with great care except for hemorrhage; rather they should be repeated and be relatively small in amount.

All these patients should be kept well covered with light, warm absorbable clothes and should be kept out of draughts. They should not be smothered, neither should they be shorn. No rule of thumb can be applied. Different people are accustomed to different types and weights of clothes and so far as possible their usual habits should be continued.

The patient with chronic pulmonary disease presents a somewhat different problem. First, urgent surgery should not be delayed. The most common alibi for procrastination is the diagnosis of tuberculosis typhilitis with abscess or obstruction in the one who already has pulmonary tuberculosis. In my own brief experience I have several times seen the true condition of acute appendicitis unrecognized on this account and the chances for successful results of early operation thus thrown to the winds.

Interval surgery with underlying chronic pulmonary disease offers still another phase

of the whole question. Meddlesome and unnecessary operations are, of course, unwarranted. But any procedure which would benefit the patient unhandicapped by pulmonary disease will probably benefit one so afflicted even more. In preparing such patients for operation the chief aims should be: first, to render the lung condition as quiescent as possible, which can be best judged by the x-ray; second, to build up the general condition of the patient so that he is eating and sleeping well, gaining in weight, and has a good mental attitude; third, by following out the above, to reduce all symptoms of toxicity to a minimum; and, fourth, to minimize the chances of the spread of his pulmonary disease during and following operation by preoperative drainage of the lungs by posture or bronchoscope. This may require only a few days or several months, but the results will more than justify the delay. Furthermore it may first be necessary to institute some minor operative procedures on the lungs themselves such as artificial pneumothorax, repeated bronchoscopies, phrenicectomy, or division of adhesions in cases of tuberculosis under pneumothorax therapy.

#### PROCEDURE

**OPERATIVE.**—Preliminary to the operation itself, the choice of anesthesia is to be considered. This procedure has made such rapid strides within the past decade as to leave us rather bewildered. Our ideas as to basal anesthetics have been extended so that we are now using these drugs less routinely and more according to selection of cases. In the presence of an acute respiratory infection avertin, nembutal, or sodium amytal may be administered with safety in moderate dosage, or a combination of either of the last two in still smaller dosage, or luminal, may be used in conjunction with morphine and hyoscine. When such drugs have been given, enough time must be allowed to elapse before proceeding further, following which the operative procedure can be carried out under local or light general anesthesia. If the latter is to be employed, either is, of course, contra-indicated. As between ethylene and nitrous oxide, the former is to my mind far superior. It affords better relaxation and an abundance of oxygen, which nitrous oxide does not, and because of this less strain is placed on the right side of the heart with the ensuing pulmonary congestion, as so frequently happens with the asphyxia of nitrous oxide.

The best choice of the anesthetic, however, for this group of cases is spinal, regional, or

local anesthesia. Interference with normal respiration and danger of aspiration is reduced to an absolute minimum. With spinal and block anesthesia such perfect relaxation is obtained that technical procedures are facilitated, gentleness of manipulation is encouraged, and the operating time reduced. All of these are of great importance. More or less amnesia and analgesia are first procured by veronal, or morphine, with or without hyoscine, and any undue fall in blood pressure can be prevented by hypodermic injection of ephedrine, five minutes before the solution is introduced into the spinal canal and repeated later if necessary.

May I make a short digression here on the most common surgical condition with which we are confronted in acute pulmonary disease, empyema? Until thick, frank pus gives evidence of safe protecting pleural adhesions no open operation should be performed. The principles so ably stated by Graham during the World War still hold and failure to observe them will result in aggravation of the condition and an increase in the mortality. Rather drainage must be maintained, and the lung allowed to reexpand, either by repeated aspirations, or by the institution of closed catheter drainage with the catheter introduced at the lowermost level of the cavity. Depending upon the presence of a bronchial fistula, dyes or antiseptic solutions may, or may not, be used. When this method of treatment has failed and the pus has become thick, then, and then only, should open drainage be established. This is best accomplished by the removal of a short piece of rib under local anesthesia or ethylene, preferably the former. Here again the essence of success lies in proper placing of the opening at the bottom of the cavity. The cavity should be thoroughly cleaned of pus and fibrin, and may then be temporarily packed with gauze or simple tube drainage established with frequent Carrel-Dakin irrigation.

This choice of anesthesia applies also to internal surgery in cases of chronic pulmonary disease. Whenever possible, spinal, block, or local anesthesia are the anesthetics of choice for the reasons already stated. Lately we have been employing high spinal anesthesia for some of our upper stage thoracoplasties with good results. My feeling here, however, is that there is an unjustifiably thin line of reserve and safety. Respirations tend to be shallow and the ability for effective cough impaired; therefore it is my opinion at present that spinal anesthesia should not be advised for operations above the level of the midtho-

racic region. In this group rectal ether, inhalation anesthesia, ethylene, or nitrous oxide preceded by adequate basal preparation can be used with perfect safety. Included in some of the newer apparatus is a soda-lime-carbon-dioxide absorber. This is a great improvement over the older methods, and when used a perfectly quiet natural sleep is produced free from hyperpnea, dyspnea, or respiratory irritation, and unaccompanied by the sweating, exhaustion, and cardiac strain which so often accompany ordinary inhalation anesthesia. This is, moreover, of particular importance in cases of chronic pulmonary disease and it is quite conceivable that it may become the method of choice for all these patients.

Let me say a few words about the basal anesthetic in chronic pulmonary disease. Avertin and amylal are contra-indicated as they are respiratory depressants with a prolonged action. Nembutal in small doses is better assimilated. A preoperative preparation which I have found quite satisfactory consists of sodium bromide, gr. 90, the night before operation. Luminal, gr. 3, or nembutal, gr. 1½, repeated once is given one and a half hours before operation, and morphine, gr. 1/6, and hyoscine, gr. 1/200, an hour later. This usually insures a restful immediate preoperative period and a quiet anesthesia, yet one in which the cough reflex has not been already abolished and from which the patient promptly awakens and resumes his normal respiratory level. More morphine can always be given if necessary at the start of, or during, the anesthesia.

As to supportive measures during the operation itself, if it is of sufficient magnitude, 1,000 c.c. of saline given slowly by rectum early may obviate the need of an infusion or hypodermoclysis later. Or, if this has not been done, a coffee enema immediately following operation may accomplish the same result.

Following operation, the type of dressing is first considered. Tight strapping of the abdomen and lower chest should be avoided; this splints the diaphragm and lower ribs and favors the development of atelectasis, stasis, and pneumonia. The same applies to dressings on wounds of the chest itself. Once the dressing has been properly applied, the patient should be placed in warm, clean clothes, kept out of draughts, and returned to a warmed bed as expeditiously as possible. If the operation has been on, or within, the thorax, the patient should always be placed on the affected side to help drainage, to pre-

vent intrabronchial drainage from the bad to the good lung, and to insure maximum comfort and freedom of respiration. Cough should be facilitated; it rids the bronchi of their accumulated secretions and aerates the lungs. In order to do this, it is frequently advisable to place the foot of the bed on shock blocks until the patient has regained full control of himself. After this his position should be changed at regular intervals.

Again let me urge you to consider the individual habits of the patient as to clothes and fresh air. Allow plenty of fresh air so long as it does not blow directly on the patient; the temperature can be easily regulated. If the patient is accustomed to heavy flannels, now is not the time to make a change. Conversely do not give an inadvertent hot pack and sweat with blankets because of nursing routine irrespective of the time of year and personal living conditions of the patient. He should be kept warm and dry, not in a profuse perspiration. Adequate fluids should be supplied for two reasons: first, to supply the bodily needs of the patient, and second, to prevent increased viscosity of the bronchial secretions.

As to drugs and sedatives, I deplore their too liberal or routine use postoperatively. Morphine is the chief culprit and it is usually prescribed in unnecessarily large amounts. It is a distinct respiratory depressant, promotes a shallow and slow respiration and inhibits cough. Given only when needed and in 1/16- to 1/8-grain doses it will in the great majority of cases accomplish all the 1/4-grain dosage accomplishes without the deleterious effects of the latter. With these smaller doses the patient is kept comfortable without being allowed to swing through a recurring arc with pain on one end and stupor on the other. Frequently this very small dose may be repeated at three-hour intervals with good effect. Furthermore, chloral hydrate and sodium bromide by rectum, or codeine or sodium luminal subcutaneously may be sufficient by themselves. Much attention has been given lately to the use of carbon dioxide at the close of the anesthesia and during the succeeding six hours. If used with care, this is helpful; otherwise it acts as a respiratory irritant and is also annoying to the patient. The mixture to be inhaled should never be stronger than 5 per cent carbon dioxide, preferably 3 to 4 per cent. Two or three minutes of this once or twice an hour will give the desired hyperpnea and pulmonary ventilation; too long periods of hyperpnea are exhausting.

Even with the best of care a certain num-

ber of respiratory complications will develop postoperatively no matter what type of anesthesia is used. The simplest is the group of upper respiratory infections. Should any of these occur in spite of all the precautions taken, they are met with the usual methods at one's disposal. The more serious have to do with the lungs themselves. The most common of these is a partial or complete atelectasis, the so-called massive collapse.

In the great majority of instances, if not in every case, the precipitating cause is bronchial obstruction due to accumulated plugs of tenacious or inspissated mucus, and the predisposing conditions which in turn favor this development are often the fault of the surgeon. These are tight strapping of the abdomen and lower chest, abolition of the cough reflex as from the use of opium to the point of stupor, dehydration with resultant thickening of bronchial secretions, shallow respirations, retained secretions, and abdominal distention. I have discussed all but the last-named. This may be handled in two ways: by attempts at prevention or treatment after it occurs. Every effort should be made to prevent and control it. For the past year in all abdominal cases I have used pitressin intramuscularly, one ampule every four hours for twelve doses, with exceedingly good results. Rarely it may not be tolerated, but as a general rule if begun during the operation or immediately thereafter, gas pains and distention seem to be distinctly less than when it has not been used.

Atelectasis occurs usually within the first forty-eight hours and may be at once suspected by its sudden onset with dyspnea, a possible chill, and prompt jump in temperature and pulse rate. The diagnosis may be confirmed by the physical signs of dullness, absent breath sounds, a few rales, elevation of the diaphragm, pulling of the mediastinum to the affected side, and decreased mobility of that side of the chest. X-ray is confirmatory and diagnostic. Treatment consists of turning the patient on the unaffected side and slapping the affected side briskly, inhalations of 5 to 10 per cent carbon dioxide and oxygen, the administration of a strong expectorant or an emetic, and, if these lesser measures fail, the bronchoscope. This condition should be immediately recognized and relieved, otherwise the infected mucous plug prepares the ground and pneumonia follows.

Pneumonia, bronchitis, or lung abscess may be caused by aspiration at the time of operation and when they occur require immediately the best of medical advice and therapy and

possibly subsequent surgery. This brings us finally to the embolic group, some of the most fearsome of all surgical complications. They usually make their appearance relatively late—from five days to seven or eight weeks. The simplest is the bland pulmonary infarct accompanied by sharp pain in the side, bloody sputum, and a friction rub. Should this occur, the patient's blood should be immediately analyzed as to its thrombin-fibrinogen balance and low fat and protein diet and sodium thio-sulphate given if this is found high. The work of Bancroft and Stanley-Brown would indicate these to be very real factors in the development and treatment of thrombi and emboli.

The embolus may be bland and small. If infected, there will be a surrounding pneumonic zone and eventual abscess formation; or, it may be the precursor of a series of emboli or the single fatal type. At all events the question at once arises whether the surgeon should not be prepared for an immedi-

ate Trendelenburg operation. My personal feeling is that he should, and everything should be in readiness. This will be facilitated and the chances for success enhanced if the situation is explained and the simple preliminary operation of removal of the second and third left costal cartilages at once undertaken under local anesthesia.

#### SUMMARY AND CONCLUSIONS

In the foregoing I have attempted to outline a working basis which the general surgeon can employ in his contact with patients suffering from pulmonary disease. Like the diabetics and thyroid cases, they present problems of their own and some points of difference from the uncomplicated surgical patient. For their successful management careful thought and planning are required, swiftness and gentleness are at a premium, and accurate diagnosis and the courage founded on sound surgical judgment are essential.

768 PARK AVE.

## SURGERY OF INFANCY AND CHILDHOOD

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Surgery of infancy and childhood includes so many elements in addition to the treatment of the actual surgical condition that the management of this branch of surgery necessarily differs from that of adult surgery. For example, an infant with an appendix abscess not only requires many dressings, but also careful attention to feeding.

The surgeon who hopes to be successful with infants and children must understand child psychology. He must be patient and sympathetic and have a personality congenial to that of a child. He must use the utmost care and gentleness in all manipulations of painful structures. A friendly spirit established at the initial examination may go a great way toward the successful accomplishment of the necessary surgical procedure and its attendant difficulties.

Infancy may be considered as that part of early life from birth to the completion of the first dentition, or about two and one-half years. Childhood extends from this period to the development of puberty. There are

but few surgical conditions which are peculiar to infancy and childhood, the majority of diseases being the same as in adults, except that they are modified by the conditions which characterize early age. These modifying factors are often not detrimental in their influence. While the absence of speech in an infant deprives the examiner of the subjective help he obtains from an adult, it is an advantage in that it makes the surgeon depend more upon his powers of observation and his exercise of good judgment.

Another factor affecting the course of any disease in a child is the process of growth and development. It is this that often makes disease sudden in its onset, short in its course, and, perhaps, intense in its manifestations. It is this factor, also, which comes to the aid of the surgeon in overcoming by growth the malalignment of a fracture or the spontaneous healing of an incisional hernia.

The resistance of children differs from that of adults. As their tissues are not affected by degenerative diseases, they have the highest powers of recuperation.

One must be ever mindful of the fact that there is a definite limit to the amount of sur-

gery that an infant or child can stand. Barrington Ward states this fact plainly when he says: "The standard of operative treatment of infants and children must be high technically as they resist powerfully to a certain point, but the fall is precipitate."

There is no operative skill that can overcome the results of delays in diagnosis. A child with a ruptured appendix and general peritonitis in the hands of a master surgeon probably does not have as good a chance of recovery as a child who has had his appendix removed before rupture, by someone far less skillful. Early diagnosis is often difficult, but it can usually be made if the examiner follows a fairly definite plan of examination. He must seize his opportunities as they present themselves, be ever ready to change his plan of attack, and be gentle but thorough at all times.

Fortunately, some of the old-established methods of preparation for operation have fallen into discard. The custom of starvation and purgation has no place in modern surgical procedure. The ability of an infant to stand starvation has previously been underestimated, and, now, we fully appreciate the importance of body fluids both before and after operation. Purgation and starvation not only upset this fluid balance by waste of valuable body fluids, but purgation, by irritating the intestinal tract, definitely increases post-operative discomfort. Now we aim to build up a reserve of body fluids before operation and to maintain this balance during the most critical part of the child's convalescence. There are many ways in which this may be done. Fluids used are 5 to 10 per cent glucose and saline given by infusion, hypodermoclysis, proctoclysis or intravenous drip. We have found this latter method, as worked out by one of the attending pediatricists at the Babies Hospital, very useful, and we have been able to give a continuous drip infusion for as long as five days. It is a most satisfactory method, is applicable to many cases, and it is given so slowly that it is free from the danger of overloading the right heart.

Transfusion must not be forgotten in the preoperative preparation of infants and children. This most useful adjunct is probably one of the greatest aids. It is not difficult to do, has a wide application, and has few contra-indications. The smallest infant may receive 20 c.c. of whole blood per kilogram of body weight by any of the approved methods. We prefer the Lindeman method. I believe, however, one must be most careful in using

a transfusion or infusion in any case with a complicating pulmonary disease because of the danger of overloading the right heart.

One must ever be on his guard against acidosis. This condition is precipitated by starvation and purgation. It may be most troublesome, and it is to avoid this complication that we allow the child to have his usual diet on the day preceding operation and allow water to be taken to within one hour of the time of operation. For the same reason, fluids are forced after operation and probably allowed earlier than to most adults. Saline and glucose solutions can be used to keep a child free from ketosis for as long as a week. The best example of the effect of fluids is shown in the group of children with pyloric stenosis. They probably have the greatest fluid unbalance of any group of children that we see. This is particularly true if they have been vomiting for some time. So striking is the change in these patients after three or four days of forced fluids, that one would hardly recognize them as the same babies. The continued vomiting causes a decrease in chlorides so that saline to replace lost fluid is better than glucose in this instance. In this way, the poorest surgical risk may be converted into a safe one in a short time. The mortality of this group at present is decidedly below 1 per cent, and I am sure that this is due entirely to proper restoration of fluid balance before attempting operation. We have not found it necessary to do preoperative blood chemistry as diabetes and nephritis may be diagnosed in other ways, and taking blood may be difficult.

Status lymphaticus is a condition that may cause the surgeon great anxiety, and almost every surgeon has had a patient die very suddenly perhaps while being anesthetized. The postmortem examination often reveals a large thymus and hypertrophy of the lymphatic elements. In other cases, no cause for death is found. There is a great difference of opinion regarding this condition, and it is questionable how large a part the enlarged thymus plays in the picture. It is practically impossible to routinely x-ray the chest of each child for enlarged thymus. If the condition is suspected, an x-ray may be of great help in confirming the suspicion, and, if an enlarged thymus is found, it is better to postpone any elective surgery until the thymus is treated with radium or x-ray.

It is not unusual to find that a child has an unexplained temperature at about the time

planned to operate upon him. This may be due to dehydration, an acute ear, a red throat, or the earliest sign of one of the exanthemata. The temperature is often of no consequence, but it is a safe rule to postpone for a few hours at least, any elective operation on an infant or child who has an unexplained temperature.

The question of anesthesia is one that troubles most parents, but it is one that need concern the surgeon very little if he insists upon the anesthetist's using open cone ether and makes sure that he devotes his attention exclusively to the patient during the operation. Infants and children tolerate open ether very much better than adults, and are not nearly as sick after it as older patients are. It has been our practice to use ethyl chloride for induction followed by open drop ether. The indications for local anesthesia, whether it is infiltration, field block or spinal, are very limited, and necessary only where there is an acute respiratory infection present when surgery needs to be done. Avertin as a basal anesthetic has many uses in children, and it seems to be tolerated better by them than by adults.

Regarding actual surgical procedure, the most rigid asepsis must be practiced at all times. Children are very susceptible to infection, and every means at hand should be used to guard them against it. The operation should be carefully planned and executed with as much dispatch as is consistent with gentleness, careful handling of tissues, and strict hemostasis. The temperature of the operating room should be about 72° F.; the child should be protected from unnecessary exposure, and body heat maintained during operation. Everything should be ready to start the operation before the induction of the anesthesia so as not to keep the child under anesthesia longer than is necessary. At the conclusion of the operation, the child should have any moist coverings changed for dry ones before leaving the operating room. He should be placed in bed with his head lowered until he has fully recovered from the anesthetic. A tank of oxygen and tongue forceps should always be at hand in the recovery room. No child should be left alone until completely recovered from the anesthetic.

Plain fluids are allowed as soon as nausea and vomiting have ceased, and children may be given tap water or glucose by rectum immediately after operation. If there is any tendency to acidosis, infusion or clyses may be started before the child awakes. As a rule, it is no trouble to force fluids in children

after operation. Solid food may be given on the second or third day after operation. All incisions should be dressed every two days because of the danger of contamination from soiled diapers.

Most of the usual postoperative complications of adult surgery are entirely lacking in children. Pulmonary embolism is practically unheard of. Postoperative pneumonia is much less frequent. Postoperative retention of urine is never troublesome, and cathartics are hardly ever necessary. We need to be concerned a little more about postoperative rupture of incisions in children than we do in adults, particularly in those children who are poorly nourished or who develop measles or whooping cough soon after operation. To guard against this complication, we make it a practice to use retention sutures for the deep layers, particularly for rectus incisions, and to take particular care to get an accurate layer closure of all incisions. Most children will unconsciously keep an injured part at rest, and, when once taught to lie quietly in bed, they will remain so indefinitely.

In conclusion, therefore, we may say that infants and children are excellent patients, as a rule, and splendid subjects for surgical procedures that are carefully planned and as skillfully executed as is consistent with the utmost care and gentleness in handling tissues. The surgical approach to the diseased organ should be as direct as possible as there is practically no indication in children for the so-called exploratory laparotomy of adults. Careful hemostasis is very essential, and the careless, rough, dragging upon organs and blunt dissection which in an adult result in a stormy convalescence may prove fatal for a child. There is no excuse in our day for a surgeon's performing any elective major surgery on a child without determining first that the child is in the best possible physical condition. Many a skillfully executed operation has been a failure because the child was dehydrated, anemic, exhausted, or otherwise not in condition to withstand it. There is a definite relation between the state of nutrition, the general condition, and the convalescence from any operation.

Children bear hunger, pain, cold, and loss of blood very poorly. They are very susceptible to shock and do not stand prolonged operations well. Their recuperative powers are tremendous, and, if given half a chance they will recover in the face of the greatest odds.

## A CLINICAL STUDY OF PERSISTENT ENURESIS

By MEREDITH F. CAMPBELL, M. D.

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Read at the annual meeting of the Medical Society of the State of New York, New York, N. Y., April 5, 1933.

This clinical study of enuresis has been confined to children four years of age and over in whom the usual methods of treatment have failed. The data presented were obtained by systematic urological examination in 330 cases of this type and indicate that demonstrable uropathology exists in approximately two-thirds of these cases. The etiologic relationship of organic changes to the clinical syndrome of persistent enuresis is the thesis of this communication.

We should consider enuresis as a symptom and not a disease. The clinical syndrome which has been loosely designated enuresis is characterized by involuntary urinary incontinence, usually nocturnal, less often diurnal, but occasionally both diurnal and nocturnal. In the cases urologically studied and reported here the pediatricians who referred the children for examination had made the clinical diagnosis of enuresis on the above criteria (Table IV). In any discussion of enuresis the problem of nomenclature at once arises. Although the definition of enuresis has often been qualified as "involuntary urinary incontinence in the absence of urinary tract changes," in a surprisingly large number of cases, there is nothing in the symptomatology or urinalysis to distinguish the purely functional disturbances from those due to obstruction, for example. This distinction can be made only by urologic examination. It seems to me, therefore, that justifiably we should take a broader view of so-called enuresis and always bear in mind the possibility of an organic basis for the condition (Table VIII). There is a striking uropathic analogy between enuresis and "chronic pyelitis." Although the latter is erroneously assumed by the majority of physicians to be only a persistent inflammation of the kidney pelvis, urologic examination commonly reveals major urinary tract pathology such as infected hydronephrosis, renal stone, tuberculosis or even bladder diverticulum. In enuresis, congenital lower tract obstructions and inflammation are extremely common.

A child should normally acquire satisfactory bladder control by the age of thirty months and not later than the third birthday.

The theories concerning the etiology of enuresis are numerous and are concerned for the greater part with functional disturbances or irritation reference (phimosis, balanitis, oxyuris, etc.). Many of the theories are Freudian or pseudo-Freudian; it is unessential to go into them here. Antecedent disease has long been held to predispose to enuresis, yet in our series the incidence of measles, pertussis, chicken-pox, diphtheria and so forth parallels that in nonenuretic children (Tables II, III and V). However, bed-wetters as a group are apt to be slightly more "nervous." In our series, 158 were girls, 172 were boys.

The writer disagrees with those who believe that all enuresis is functional. I believe, however, that the vast majority of these cases, perhaps even 90 per cent, are functional. This large group will usually respond readily to the commonly employed medical or psychic treatment which includes the discontinuance of fluids after four o'clock, the use of the alarm clock, belladonna, thyroid extract, or strychnine, together with verbal encouragement or gold star rewards. By these methods, probably 9 out of 10 children will be cured. Yet Dr. G. L. Johnson, my associate in this work at the Vanderbilt Clinic, informs me that in 125 cases seen by him, 23 did not clear up by the usual methods and were referred to me for urologic examination. He states that "in these 23 cases are included a number that were cured simply by cystoscopy, and no further treatment was done. In addition, there were 3 cases that were helped by meatotomy and dilatation of the external urethral opening. This is a higher percentage (of enuresis on an organic basis) than you thought, but I think the explanation lies in the fact that the majority of the cases that come to me have first been treated unsuccessfully by the other men in the clinic by the usual procedures."

When intensive medical or psychologic treatment is unsuccessful after a two to four-month trial, the child is entitled to a com-



plete urologic examination. This has been the indication for examination in the cases under consideration here, examination has shown a hitherto unrecognized high incidence of organic urinary tract disease in persistent enuresis (Tables VII and VIII). Unsuspected infection is sometimes found. Yet it is this very infection which often causes the urethrorrigoitis, posterior urethritis, or prostatitis, which in turn are clinically manifested by enuresis. Moreover, microscopic hematuria due to inflammation or infection may also exist. The incidence of neuromuscular disease (cord bladder) and congenital lower tract obstructions is strikingly high. However, the foregoing conditions are only some of those commonly found in the large number of juvenile enuretics whom physicians are prone to treat by the usual means month in and month out and during which time the pathologic changes in the urinary tract are constantly and unfavorably progressing.

In the urologic examination of children with therapeutically resistant enuresis I proceed as follows: There is a careful physical examination with special attention to the central nervous system, particularly the deep reflexes and alterations in perineal sensation. In a certain number of children whose enuresis is a manifestation of neuromuscular disease, there are altered perineal sensory responses, sometimes a complete "saddle" anesthesia indicative of advanced sacral cord disturbances is found. These sensory changes have been most striking in association with anomalies of the sacrum yet they have shown no striking parallel to the common place spina bifida occulta. Still, neuromuscular disturbances of the bladder commonly exist without demonstrable cutaneous or anal sphincteric evidence.

Careful examination of the urine including culture is imperative. Females must be catheterized to avoid bacteriologic contamination of the urine. In most males, a satisfactory specimen can be obtained following retraction of the prepuce and thorough cleansing of the glands and meatus. A small amount of urine is allowed to pass before the specimen is taken for microscopic and bacteriologic investigation. Urinary infection was found in one-fourth of our patients. Urologically, we are interested chiefly in the pus, blood, and bacterial content of the urine. An unusual number of epithelial cells is suggestive of urethrorrigoitis.

The residual urine is then estimated. The patient empties the bladder to the best of his ability, he is catheterized at once and any urine thus obtained is the residuum. One of

the most striking findings in our study has been the high incidence of residual urine in these children with persistent enuresis. We found that approximately 1 in 6 (16.9 per cent) had residual urine, varying from 10 cc to over 10 ounces with an average of 25 to 45 cc. In other words, these children could not empty their bladders. I have not found this observation recorded elsewhere. Residual urine means either lower tract obstruction or neuromuscular disease. A small residuum causes a constant congestion and hyperirritability of the bladder outlet which during the day is commonly manifested by urinary frequency and at night by periodic incontinence. A large residuum frequently indicates chronic complete urinary retention and often the incontinence or enuresis is simply an overflow. The residual retention not only predisposes to infection but causes variable changes in the upper urinary tract.

A plain roentgenogram of the urinary tract is now made. We are particularly interested in the demonstration of stone or spinal defects, particularly spina bifida occulta. The latter has been said to be a common cause of enuresis but was found in only 15.2 per cent of our chronic cases, an incidence but slightly higher than the 10 per cent said to be normal for all individuals (Table VI). However, in a few instances, sacral deformities were proved etiologically related to the neuromuscular disease which was manifested by enuresis. Plain roentgenography is followed by cystography. A cystogram is made by filling the bladder with 5 per cent sodium iodide or with a 3 per cent solution of one of the new excretion urographic media (Iopax, Neo-Skiodin, etc.), and then making x-ray exposures. A normal bladder outline is usually obtained but in some instances a hypotonic bladder has been found to fill the entire pelvis. In certain cases of lower tract obstruction or of neuromuscular disease there has been vesico-ureteral reflux outlining the entire upper urinary tract. With vesical outlet paralysis, a cystographic funneling of the posterior urethra is seen (Table VI).

In 200 cases of chronic enuresis we made cystometric observations to study alterations in the neuromuscular balance. Briefly, cystometry consists in gradual filling of the bladder with unit volumes of fluid during which time the increasing intracystic pressure is noted and from these volume-pressure data a curve is plotted. Inflammation of the bladder outlet posterior urethra or bladder walls often complicates the interpretation of the cystometric curve, but, as a rule, the neuromuscular as

well as the sensory (response to cold water in the bladder) status can be accurately determined. We found: (a) a half of all cases showed a normal curve; (b) a fourth were hypertonic (parasympathetic imbalanced) and (c) a fourth were hypotonic (sympathetic imbalance) (Table VI). Yet the information gained by cystometry has so seldom added to that obtained by other urologic methods that I have now practically discontinued these observations.

A cystourethroscopic examination is the next step. In most girls four years of age and over this can readily be accomplished without anesthesia. In boys over four years of age I have successfully used caudal block anesthesia or have employed urethral instillation of 10 per cent novocain hydrochloride solution. However, any child who is unruly or is caused pain should be given a general anesthesia. Still, the use of regional or local anesthesia in these cases has reduced the need of general anesthesia to about 10 per cent. Cystoscopy in patients with persistent enuresis has revealed almost every known lesion of the urinary tract; the outstanding findings include trigonitis, prostatitis, verumontanitis, neuromuscular disease of the bladder outlet, congenital contracture of the bladder outlet, congenital posterior urethral valves, urethral stricture, vesical stone, and infections of the upper urinary tract including tuberculosis.

Urethrotigonitis was the most commonly observed lesion in girls. Cystoscopically, it resembles in all respects this lesion in adult women and to which the term irritable bladder has been applied. The urethroscopic picture varies from chronic mucosal congestion to the production of granulomatous or cystic projections which are most striking at the bladder outlet where they give a marked irregularity to the outline of the orifice. In some instances, the mucosa is roughly granular; it may be intensely inflamed; sometimes there are adherent flakes of mucopus and submucosal ecchymoses are often seen. The urethral lesion always extends onto the anterior trigone. Occasionally, the entire trigone or even the adjacent bladder wall is similarly inflamed. In a girl of three years referred for examination because of enuresis, the bladder showed a generalized cystitis cystica. The cystic lesion extended into the deep urethra. The methods of treatment of urethrotigonitis in children are the same as in adults. Periodic urethral dilation and, usually, the local instillation of silver nitrate solution (1:500 to 1:100) have given the best results in

my hands. Treatments are first given at ten-day intervals with lengthening intermissions as improvement occurs. Often three or four treatments suffice.

Congenital obstructions along the urethra are the usual etiologic factors in chronic enuresis in boys. Of these lesions, stricture of the meatus is the most common. I have not observed enuresis due to phimosis, but, oddly enough, in some of our patients the enuresis was said to have followed circumcision. Next to obstruction, the most common causes of persistent enuresis in boys are prostatitis and verumontanitis which, in the past, have received practically no attention in this connection. The urethroscopic picture resembles that in adults; a granular, inflamed or edematous mucosa overlies the prostatic lobes and extends onto the anterior trigone. This condition is accompanied by a markedly irregular inflammatory swelling of the verumontanum. Occasionally, flakes of mucopus are adherent to the posterior urethral walls or to the verumontanum. In many of these cases the verumontanum presents the same deeply congested irregularly swollen, mulberry-like appearance regularly seen in adults as the result of excessive habitual masturbation. Moreover, in a large number of these boys the condition was due to masturbation (Table VII). In 4 boys I found papillomatous growths springing from the verumontanum and in a fifth, a large pedunculated tumor arising from the roof of the posterior urethra extended into the bladder outlet to cause ball-valve obstruction and irritation. Suprapubic removal of the growth cured the enuresis.

When the urologic examination is entirely negative as it is in about one-third of these cases (Table VII), further medical physio- or psycho-therapy can be pursued with the assurance that no serious or potentially destructive urologic lesion exists. With the acquisition of better cerebral control the child will ultimately cease wetting. However, these "functional" habitual bed-wetters can be identified and distinguished from the "organic" group only by urologic examination which establishes the integrity of the urinary apparatus in the former. There is a general feeling among pediatricists that all children will outgrow enuresis. Doubtless most children will stop bed-wetting, yet there are a certain and important number who, with advancing years, acquire a better cerebral control but, instead of wetting the bed, get up to void. Their etiologic urinary pathology remains and we, as urologists, see them in the second and third decades with

their persistent infravesical obstructions and large urinary residua

Having established the urologic diagnosis the lesion is treated by the same methods which would be employed were the patient an adult. In many instances obstruction must be removed, sometimes infection must be eradicated.

In enuresis which is due to neuromuscular disease, too much should not be hoped for, yet a girl of eight years with 10 ounces of residual urine was completely cured by suprapubic resection of the bladder outlet. She was followed up for one year postoperatively during which time the residual was never over one dram. In a boy of seven years who had been treated two years for enuresis, the urologic tuberculous kidney was removed with restoration of control and a diminution of urinary frequency.

The urethral dilation coincident to the passage of the cystoscope has cured a few children. Yet this is not a psychic cure, in adults with chronic urethritiginitis, urethral dilation usually plays a prominent part in the treatment. Moreover, were cystoscopic dilation a uniformly successful method of psychotherapy our cures should be far more numerous (Tables IX and X).

TABLE I

Enuresis	Ages	Number of cases
Under 5 years		38
5 to 7 years		106
8 to 10 years		132
11 to 15 years		54
Total		330
Duration of enuresis		
Less than 6 months		9
6 to 12 months		21
13 to 36 months		32
Over 3 years		30
Since birth		215
Not stated		23
Total		330

TABLE II—PREVIOUS ACUTE INFECTIONS OF CHILDHOOD

	Number of cases
Measles	127
No record	85
Frequent sore throats	34
Scarlet fever	82
Varicella	60
Pneumonia	23
Epidermic parotitis	19
Frequent colds	21
Rheumatic fever	39
Otitis media	8
Diphtheria	16
Chorea	11
Cardiac disease sinusitis cystitis, each	3
Encephalitis meningitis malaria typhoid tuberculous, each	1
Pylitis	0

## SUMMARY

Enuresis is a symptom and not a disease. The diagnosis in children usually rests upon the occurrence of diurnal or nocturnal urinary incontinence. Although the condition is usually functional in a large number of juveniles it persists despite months of intensive medical physio or psychotherapy. Enurctic children in whom intensive therapy for two to four months is unsuccessful should be afforded the benefit of a complete urologic examination. In cases thus examined a third will show no demonstrable uropathology. They may be classified as functional and continued under the treatment commonly employed in enuresis. However two thirds of these cases will show pathologic changes in the urinary tract adequate to explain the symptomatology (Table VIII). One in six of this latter group will be unable to empty the bladder completely. The routine of the urologic examination we employ has been outlined. The treatment is based upon the etiology and corresponds to that employed in adults when identical uropathology exists. Urethral dilation will suffice in many cases, in others obstruction must be eliminated by surgical methods. If no lesion is found the enuresis may be confidently expected to disappear with advancing childhood.

140 EAST 54TH STREET

TABLE III—FAMILY HISTORY

	Mother	Father	Brother and Sister
Lact	4		
Deaf			1
Insane	1	2	
Smile	1	1	
Enuresis	6	6	21
Drug addict		2	1
Chronic alcohol	2	4	
Tuberculosis			

TABLE IV—SYMPTOMS

	Number of cases
Frequency	130
Urgency	193
Dysuria	63
Burning on urination	9
Hematuria (most often due to ulcerated site of cystitis)	14
Pyuria (hazy urine)	73
Abdominal pain	41
Loam pain	6
Intestinal upsets	19
Day wetting	210
Night wetting	326

TABLE V—PHYSICAL EXAMINATION

	Number of cases
	183
	125
	34
	8
	5
	3

(Table V continues on next page)

(Table V, continued)

Lymphadenitis	17
Cardiac disease	14
Marked genital consciousness	20
Bitten fingernails	13
Kidney palpable	10
Kidney tender	2
Bladder palpable	5
Abdominal pain	3
Vaginitis	12
Phimosis	5
Meatal stricture	17
Meatal stricture ulcerated	7
Incontinence—urine	6
Incontinence—feces	4
Hypertrophic labia	9
Hypospadias, hypertrophic clitoris, chorea, each	3
Acrocephaly, exophthalmos, hydrocephalic, traumatic spinal cord disease, pulmonary tuberculosis, pin worms, ocular ptosis, flaccid paralysis lower trunk and extremities, cretinoid, each	1
Mentally defective	14
Neurological examination (sacral innervation), positive	6
Behavior problem	17

TABLE VI.—UROLOGICAL EXAMINATION

Cystometric Study		Number of cases
Normal	.....	104
Hypotonic (sympathetic imbalance).....		44
Hypertonic* (parasympathetic imbalance).....		40
Total cases studied.....		188
Roentgenography		
Normal	.....	266
Spina bifida occulta (15.2 per cent).....		48
Sacral deformity.....		2
Not done.....		14
Cystography		
Normal	.....	262
Large bladder.....		25
Small bladder.....		8
Ureteral reflux.....		13
Funnel outlet.....		15
Diverticulum of urethra.....		1
Not done.....		9

\* Some of these hypertonic cases resulted from inflammation (cystitis and posterior urethritis).

TABLE VII.—CYSTOSCOPIC FINDINGS

	Number of cases
Normal	92
Residual urine (10 to 300 c.c.) (16.9 per cent)	56
Meatus atresia (stricture)	24
Urethral stricture (usually congenital)	13
Valve of fossa navicularis roof	1
Diverticulum of urethra	1
Masturbation urethritis and trigonitis in females	10
Posterior urethritis (with and without prostatitis)	51
Prostatitis (Definitely due to masturbation)	34
Enlargement of verumontanum	23
Elongated verumontanum	12
Verumontanitis	23
Papillomata of verumontanum	5
Granuloma of verumontanum	3
Papilloma of posterior urethra	2
Posterior urethral valves	27
Valve of posterior urethral roof	1
Contracted bladder neck	24
Cord bladder	21
Lax outlet	18
Urethral trigonitis	66
Hypertrophy of trigone	16
Hemiatrophy of trigone, cystocele, stone, cystitis cystica, each	1
Trabeculation	
+	18
++	28
+++	16
++++	9
Examinations	504
General anesthesia	56
Caruncle	1
Tight urethra	3
Vulvitis	1

TABLE VIII.—FINAL UROLOGIC DIAGNOSIS  
(249 Cases of Enuresis)

	No. of cases
Functional	113
Probably neurogenic	34
Cord bladder	18
Cord bladder due to trauma; Obstetrical injury	2
Surgical injury	1
Cystometric observations: Normal	104
Hypertonic	40
Hypotonic	44
Phimosis	4
Meatus atresia (stricture)	24
Urethral stricture	13
Urethritis	8
Masturbation urethritis and trigonitis in female	10
Urethral caruncle	2
Diverticulum of urethra	1
Posterior urethral valves	27
Valve of posterior urethral roof	1
Valve of fossa navicularis roof	1
Enlarged verumontanum	23
Verumontanitis	23
Papillomata of verumontanum	5
Papilloma (large) of posterior urethra	2
Granuloma of posterior urethra	11
Prostatitis (with posterior urethritis)	34
(Due to masturbation)	23
Contracted bladder neck	24
Trigonal curtain obstruction	1
Urethrotigonalitis (predominant or only lesion)	66
Generalized cystitis: Marked	7
With edema	5
Cystitis cystica	1
Vesical stone	1
Renal infection: Pyelonephritis	27
Pyonephrosis	1
Tuberculosis	2
Hydronephrosis	7
Ureteral stricture (only lesion)	1
Vaginitis	13
Hypertrophic labia (masturbation)	9
Hypospadias, hypertrophic clitoris, each	3
Diabetes mellitus, diabetes insipidus, each	1

TABLE IX.—TREATMENT

	No. of cases
None, refused or did not return	107
Medical: Rest, syring hemorrhage(1), tuberculosis(1)	2
Nursing (masturbation)	4
Psychotherapy	18
Diabetic	1
Pituitary (diabetes insipidus)	1
Atropine	29
Methenamine (infection)	24
Alkali (for infection)	15
Surgical: Posterior urethral valve excision	1
Excision of valve fold in fossa navicularis	2
Punch operation on bladder neck	1
Bladder outlet excision (transurethral electrocutting)	7
Suprapubic resection of bladder outlet	3
Excision trigonal curtain	1
Excision urethral polyp (suprapubic)	1
Excision verumontanum polyp (transurethral electrocutting)	3
Urethral meatotomy	24
Urethral dilatation with sounds	82
Cystoscope	3
Silver nitrate application	39
Indwelling catheter	1
Nephrectomy	3
Urethral dilatation for stricture (reflex frequency)	1
Suprapubic lithotomy	1
Urethrotomy and urethral diverticulectomy	1
Electrocautery of caruncle	1

TABLE X.—RESULTS OF TREATMENT

	By Examination	By Later Treatment	Total
Cured	16	59	75
Improved	39	78	117
Unimproved	..	..	53
Lost or result unknown	..	..	82
Left at own risk	..	..	3
Died	..	..	0
Recurred	..	Several	..
Total			330

## A NEW INTRAVENOUS THERAPEUTIC AGENT FOR THE CONTROL OF PEPTIC ULCER

By H. A. Butman, M.D., L. J. Schultz, Ph.D., and L. A. VanKleeck, M.D.

Read before the joint scientific session of the Nassau County Medical Society and the Associated Physicians of Long Island, October, 1933.

The control of peptic ulcer has been a difficult problem before the medical profession for many years. Many theories have been advanced and many methods of treatment have been instituted. The desired results, from these various methods of treatment employed, have not been satisfactory, inasmuch as the complete alleviation of the suffering and symptoms of those afflicted has not been substantially accomplished.

Many theories as to the etiology of peptic ulcer have been defined;

1. The vascular or blood vessel theory.
2. The toxic or infectious theory.
3. The neurogenic theory.
4. The biochemical theory.
5. The traumatic theory.

The upper portion of the stomach receives blood supply from three large direct sources, the branches of which are few in number, tortuous in character, and anastomose very infrequently. In other words, they are essentially terminal vessels. Anatomically, therefore, it seems that the ulcer bearing area of the stomach normally has a scanty blood supply.

Brown<sup>1</sup> in his article on peptic ulcer states: "Disturbance of the blood supply to the area involved is of primary importance and may be due to various causes, *i. e.*, the formation of thrombi and septic emboli; development of small aneurisms or reduction of the size of the blood vessels; rhythmic contractions of the stomach with the resultant local ischemia of reflex nature; disturbance of the gastric nerve supply or traction upon the pylorus or duodenum in marked gastropnoia."

Circulatory deficiency or impairment, therefore, is perhaps the basic factor in the etiology of ulcer, and with this in mind we can truly say that ulcer is not a local disease of the stomach but rather a generalized systemic disturbance with local manifestations in the stomach or duodenum. We know, however, that many factors, as expressed by the other theories mentioned, undoubtedly play an important rôle in the development of the disease.

The similarity of the condition of thromboangiitis obliterans and peptic ulcer is evident, inasmuch as they both possibly begin as fissures, erosions or necrotic areas. It is logical, therefore, to assume that the same factor is responsible in both conditions.

While there is a variation in the histological findings, there is a definitely close similarity in the conditions of thromboangiitis obliterans and peptic ulcer. A condition known as venofibrosis has been described by Hauswirth and Eisenberg.<sup>2</sup> The symptomatology of the condition is similar to that of thromboangiitis obliterans and sclerosis. According to these authors the condition is not rare and occurs in persons between the ages of twenty and forty years. In the majority of the cases reported there appears to be an association with peptic ulcer. These authors state in the conclusion of their first paper on the subject that thromboangiitis obliterans begins in the veins, and the condition is not inflammatory; the inflammation associated with it is a terminal process occurring after the vessels have become thrombosed and devitalized. It was upon a theory similar to this, that we held the conviction that the condition of peptic ulcer should respond favorably to a . . . . . employed in cases of . . . . . on the basis of an . . . . . local thrombosis.

The theory alluded to above is substantiated by the etiological similarity of the two conditions. That there exists a disturbance in the blood supply to the ulcerated area, tends to more conclusively indicate the logic of comparing the factors of these conditions, and venofibrosis along with other conditions in which there is an impairment in the circulatory system. It is also of interest to note from the histories and statements of those afflicted with either of these conditions (peptic ulcer-thromboangiitis obliterans), that there is a marked similarity in the nature and duration of the pain and suffering.

### BLOOD STUDIES

The results of the blood studies in peptic ulcer disclosed no pathological changes in the sugar, urea nitrogen, nonprotein nitrogen, uric acid, cholesterol, calcium, or chloride content. The coagulation time indicated, in the majority of analyses, an increased tendency toward clotting. This would indicate a thrombotic tendency. These blood findings are closely parallel to those reported in thromboangiitis obliterans (Jablons,<sup>3</sup> Meleney,<sup>4</sup> Bernard<sup>5</sup>).

### PRINCIPLES OF THE THERAPY

As has been stated many forms of therapy both medical and surgical have been offered

(Table V, continued)

Lymphadenitis	17
Cardiac disease	14
Marked genital consciousness	20
Bitten fingernails	13
Kidney palpable	10
Kidney tender	2
Bladder palpable	5
Abdominal pain	3
Vaginitis	12
Phimosis	5
Meatal stricture	17
Meatal stricture ulcerated	7
Incontinence—urine	6
Incontinence—feces	4
Hypertrophic labia	9
Hypospadias, hypertrophic clitoris, chorea, each	3
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Hypertonic* (parasympathetic imbalance).....		40
Total cases studied.....		188
Roentgenography		
Normal	.....	266
Spina bifida occulta (15.2 per cent).....		48
Sacral deformity.....		2
Not done.....		14
Cystography		
Normal	.....	262
Large bladder.....		25
Small bladder.....		8
Ureteral reflux.....		13
Funnel outlet.....		15
Diverticulum of urethra.....		1
Not done.....		9

\* Some of these hypertonic cases resulted from inflammation (cystitis and posterior urethritis).

TABLE VII.—CYSTOSCOPIC FINDINGS

	Number of cases
Normal	92
Residual urine (10 to 300 c.c.) (16.9 per cent)	56
Meatus atresia (stricture)	24
Urethral stricture (usually congenital)	13
Valve of fossa navicularis roof	1
Diverticulum of urethra	1
Masturbation urethritis and trigonitis in females	10
Posterior urethritis (with and without prostatitis)	51
Prostatitis	34
(Definitely due to masturbation)	23
Enlargement of verumontanum	25
Elongated verumontanum	12
Verumontanitis	23
Papillomata of verumontanum	5
Granuloma of verumontanum	3
Papilloma of posterior urethra	2
Posterior urethral valves	27
Valve of posterior urethral roof	1
Contracted bladder neck	24
Cord bladder	21
Lax outlet	18
Urethral trigonitis	66
Hypertrophy of trigone	16
Hemiatrophy of trigone, cystocele, stone, cystitis cystica, each	1
Trabeculation	18
++	28
+++	16
++++	9
Examinations	504
General anesthesia	56
Caruncle	1
Tight urethra	3
Vulvitis	1

TABLE VIII.—FINAL UROLOGIC DIAGNOSIS  
(249 Cases of Enuresis)

	No. of cases
Functional	113
Probably neurogenic	34
Cord bladder	18
Cord bladder due to trauma: Obstetrical injury	2
Surgical injury	1
Cystometric observations: Normal	104
Hypertonic	40
Hypotonic	44
Phimosis	4
Meatus atresia (stricture)	24
Urethral stricture	13
Urethritis	8
Masturbation urethritis and trigonitis in female	10
Urethral caruncle	2
Diverticulum of urethra	1
Posterior urethral valves	27
Valve of posterior urethral roof	1
Valve of fossa navicularis roof	1
Enlarged verumontanum	25
Verumontanitis	23
Papillomata of verumontanum	5
Papilloma (large) of posterior urethra	2
Granuloma of posterior urethra	11
Prostatitis (with posterior urethritis)	34
(Due to masturbation)	23
Contracted bladder neck	24
Trigonal curtain obstruction	1
Urethrotigonalitis (predominant or only lesion)	66
Generalized cystitis: Marked	7
With edema	5
Cystitis cystica	1
Vesical stone	1
Renal infection: Pyelonephritis	27
Pyonephrosis	1
Tuberculosis	2
Hydronephrosis	7
Ureteral stricture (only lesion)	1
Vaginitis	13
Hypertrophic labia (masturbation)	9
Hypospadias, hypertrophic clitoris, each	3
Diabetes mellitus, diabetes insipidus, each	1

TABLE IX.—TREATMENT

	No. of cases
None, refused or did not return	107
Medical: Rest, syring hemorrhage(1), tuberculosis(1)	2
Nursing (masturbation)	4
Psychotherapy	18
Diabetic	1
Pituitary (diabetes insipidus)	1
Atropine	29
Methenamine (infection)	24
Alkali (for infection)	4
Surgical: Posterior urethral valve excision	15
Excision of valve fold in fossa navicularis	1
Punch operation on bladder neck	2
Bladder outlet excision (transurethral electrocutting)	7
Suprapubic resection of bladder outlet	3
Excision trigonal curtain	1
Excision urethral polyp (suprapubic)	1
Excision verumontanum polyp (transurethral electrocutting)	3
Urethral meatotomy	24
Urethral dilatation with sounds	82
Cystoscope	3
Silver nitrate application	39
Indwelling catheter	1
Nephrectomy	3
Urethral dilatation for stricture (reflex frequency)	1
Suprapubic lithotomy	1
Urethrotomy and urethral diverticulectomy	1
Electrocautery of caruncle	1

TABLE X.—RESULTS OF TREATMENT

	By Examination	By Later Treatment	Total
Cured	16	59	75
Improved	39	78	117
Unimproved	..	..	53
Lost or result unknown	..	..	82
Left at own risk	..	..	3
Died	..	..	0
Recurred	..	Several	..
Total			330

other than a pleasant tingling sensation in the tongue and lips. Hemorrhage which is a common complication of peptic ulcer is no contraindication to the employment of this therapy.

#### DIETARY ROLE

In the past, diet has played a paramount rôle in the treatment of this condition. We are all well acquainted with the classical therapy as has been so often described by Sippy,<sup>5</sup> and we have no doubt that each régime has been employed extensively by all internists. It is not our purpose to condemn these régimes but rather to state that our experience over the past two years has convinced us that diet in uncomplicated ulcer, associated with this new therapy, while still of importance, permits from the onset of treatment, regular well-balanced and well-chosen meals of greater variety and amounts.

In our series, two cases due to severity of symptoms received alkalis by mouth in conjunction with the intravenous therapy. Two cases which were complicated by hemorrhage were placed on the Sippy diet for one week.

#### RESULTS OF TREATMENT

Our series consists of 22 cases, all of which have been diagnosed as duodenal ulcer, except 2 which were gastric. Of this group, 18 cases were studied under the routine as previously described. The remaining group of 4 cases could not be studied in like manner due to financial inability on the part of the patients. However, clinically, most of this group presented typical histories, as well as typical symptoms. Many of this latter group had been x-rayed in the past and either presented old plates which definitely identified the condition or presented written reports of the same from roentgenologists. Two cases as stated before were complicated by hemorrhage. Twenty cases were males and 2 females. The age incidence ranged from the youngest, a boy thirteen to the oldest, a man of sixty-five. The duration of the original complaint varied from three to twenty-five years.

The oldest of our group, a male of sixty-five, has had a duodenal ulcer of nineteen years' standing. To quote him, "During this time I cannot recall being without distress." He had been x-rayed and had been under classical treatment for the past ten years. He came under our observation during an acute hemorrhage, and for this reason no recent x-rays were made. The injections were started immediately during the bleeding stage. These were given every day for the first four days, and then twice a week, until twenty had been given. For the first week he was placed on

the Sippy diet and following this he was given the régime as described in this article. He became symptom-free after the sixth injection. It has been fifteen months since his last injection, he has gained 12 lbs. in weight and has had no return of symptoms. An interview with him three weeks ago revealed complete relief in every detail.

Perhaps the most interesting case in our series is that of a thirteen-year-old school boy, whose disturbance began three years ago. At the onset his complaints were belching of gas and slight epigastric pain one or two hours after eating, which would manifest themselves periodically every four or five months. Food would immediately relieve his distress. Pain gradually became a cardinal factor not only in severity but also in frequency and duration. When he came under our observation the pain had become so severe that in order to obtain relief he was forced to lay on the floor and exert pressure over the epigastrium. Roentgenological study revealed a very large duodenal ulcer. Intravenous therapy was immediately started and the usual dosage given. He responded most favorably being symptom-free after the second injection. Following his course of treatment he was re-x-rayed. This revealed the persistence of the ulcer but with apparent beginning healing. Symptomatically and clinically he was entirely well and up to one month ago has had no recurrence.

Another case record is that of a male, age forty-two years, who came under our observation following an attack of severe weakness, associated with passing of copious tarry stools. His past history was essentially negative, except for the fact that he suffered from mild attacks of so-called indigestion for many years. He gave no history of pain and stated that he had always been in excellent health. He was placed on the Sippy diet for one week in conjunction with the intravenous therapy. After eight injections he was symptom-free. During the interim between his fifteenth and sixteenth injection he complained of epigastric distress and vomiting associated with generalized abdominal pain. His pain, however, localized shortly and a diagnosis of acute appendicitis was made. He was operated upon and had an uneventful convalescence. Upon his return home he complained of epigastric pain. This was relieved by taking food, bicarbonate of soda, or a small amount of milk of magnesia. A gastro-intestinal series revealed a definite duodenal ulcer. Intravenous therapy was again started and he received a full course of twenty injections. Seven months later his re-x-ray was reported as a healed scar.

## SUMMARY OF CASE RECORDS

Case	Age	Sex	Duration of symptoms	Pain	Vomiting	Bleeding	Type—gastric—duodenal	X-ray + or —	Total injections given	Number injections for symptomatic relief.	Alkalis by mouth	Other diets used	Remarks
1 A. N.	43	F	10 yrs	****	*	***	D	*	20	7	2 wks	o	Symptomatic cure
2 D. M.	65	M	19 yrs	***	—	*	D	*	20	13	2 wks	Sippy 1 wk	Symptomatic cure Gained 12 lb.
3 A. D.	51	M	o	—	*	*	D	*	28	4	1 wk	Sippy 1 wk	Appendectomy after 8 injections Symptomatic cure
4 A. T.	23	M	2 yrs	*	—	—	D	*	28	7	o	o	Symptomatic cure
5 W. S.	35	M	7 yrs	**	—	—	D	*	20	10	o	o	Symptomatic cure
6 A. C.	40	F	5 yrs	**	—	—	D	not done	20	7	o	o	Symptomatic cure
7 R. G.	13	M	3 yrs	****	*	—	D	*	20	2	o	o	Symptomatic cure
8 C. H.	42	M	6 yrs	—	**	*	D	—	30	15	o	o	Previous pylorospasm Symptomatic cure
9 A. V.	41	M	2 yrs	*	—	—	D	not done	8	3	o	o	Refused treatment Symptomatic cure to date
10 G. S.	51	M	25 yrs	***	—	—	D	*	37	14	o	o	Re-x-ray shows no pylorospasm Symptomatic cure Gained 15 lb.
11 R. N.	39	M	7 yrs	**	—	—	D	*	22	5	o	o	Symptomatic cure
12 A. N.	21	M	2 yrs	***	—	—	D	*	22	10	o	o	Symptomatic cure
13 F. W.	31	M	6 mo	**	—	—	D	*	20	6	o	o	Symptomatic cure Gained 12¾ lb.
14 S. C.	40	M	6 yrs	**	—	—	D	*	20	14	o	o	Symptomatic cure
15 J. C.	36	M	2 yrs	*	*	—	D	*	18	9	o	o	Symptomatic cure
16 G. Y.	49	M	6 yrs	*	—	—	D	*	30	13	o	o	Symptomatic cure
17 M. A.	45	M	6 yrs	*	—	—	D	*	20	10	o	o	Symptomatic cure
18 Dr. H. M.	32	M	6 yrs	**	—	*	D	—	25	12	o	o	Previous operation for perforation Symptomatic cure Gained 14½ lb.
19 W. W.	34	M	6 mo	*	—	—	D	*	20	5	o	o	Symptomatic cure
20 M. Z.	39	M	7 yrs	*	—	—	D	*	26	7	o	o	Symptomatic cure
21 J. R.	38	M	10 yrs	***	*	—	G D	**	24	10	o	o	Symptomatic cure
22 R. W.	28	M	4 yrs	*	—	—	D	*	26	8	o	o	Symptomatic cure

Key: Positive \*  
Negative —  
Male M  
Female F

Duodenal  
Gastric  
Not used

D  
G  
o

## CONCLUSIONS

Our results and the results of our colleagues who report favorably of over 100 cases have been more than gratifying, and we believe that this new method of treatment is worthy of merit and medical interest for the following reasons:

1. Circulatory deficiency or impairment is perhaps the basic factor in the production of ulcer. This may be brought about by various secondary causes, *i.e.*, trauma, infectious and toxic processes, chemical changes, disturbance of the gastric nerve supply, all of which aggravate and help toward the ultimate formation of an ulcer.

2. The intravenous injection of definite proportions of sodium citrate and chloride which has been buffered to the correct hydrogen ion concentration with a buffer salt, appears to be more effective in the treatment of peptic ulcer than the classical régimes which have been tried in the past. It approaches more accurately the supposed etiology of peptic ulcer. It promotes healing by:

(a) Improving the chemical or acid base balance of the blood.

(b) Improving both the direct and collateral circulation to the ulcer bearing area of the stomach and duodenum thereby lessening the tendency toward capillary stasis or venofibrosis with consequent malnutrition of gastroduodenal mucosa.



(c) Improving the tissue resistance to digestion of the same by the gastric secretions.

(d) Improving the general circulatory system throughout the body with resulting increased resistance to systemic disease.

3. All cases in our series were symptomatically cured.

4. Ulcer complicated by hemorrhage is no contra-indication to the employment of this form of therapy.

5. The use of this solution permits from the onset a more liberal diet for the patient, except in those cases which are complicated by hemorrhage.

6. Our experience has proven that the solution and method of its administration are absolutely safe inasmuch as we have experienced no untoward symptoms or reactions in our entire series.

7. The use of alkalis by mouth are unnecessary in the average case during treatment by this intravenous method, except where symptomatology persists in being severe and then only from seven to fourteen days or at the discretion of the physician.

8. This form of treatment should be given routinely two or three times a week depending on the symptomatology. Twenty-four injections constitute a course following which we recommend that an injection be given every two to four weeks for a period of at least twelve months. By so doing, healing is maintained and the chance of recurrence is minimized. This we feel is substantiated by the

fact that those cases in our series which were re-x-rayed showed a definite tendency toward healing which we felt would continue to a full healing state under prolonged treatment.

9. Classical treatment requires bedrest for those individuals afflicted with uncomplicated ulcer until such time as a maintenance diet will permit them to return to work. This to the majority of ulcer patients is a hardship primarily due to the financial ability of the majority of these cases to afford the time. This new method of treatment permits a maintenance working diet at the onset which, to these patients, is of paramount importance.

10. No positive statement as to permanent cure can be made at the present time but at a later date and after longer observation of these cases a definite statement may be forthcoming.

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2930 NORTHERN BLVD, MANHASSET, NEW YORK.

## THIS AND THAT

An investigation to find what the average family pays for medical care was made by the Metropolitan Life Insurance Company among the members of the families of its own field force. It found that the average annual expense per family was \$104.20. Among families receiving from \$1,200 to \$2,000, the expense for medical care averaged \$63.40. Among those getting \$2,000 to \$3,000, it averaged \$80.38. Those getting from \$3,000 to \$5,000 paid \$110.54, those getting \$5,000 to \$10,000 paid \$167.77, and those getting \$10,000 and over paid \$270.34. These figures are less than those reported by the survey of the Committee on the Cost of Medical Care, whose estimates for the same incomes were \$66.81, \$94.84, \$137.92, \$249.35, and \$503.19 respectively.

Cambridge University before the recent session of the British Association for the Advancement of Science, as reported in the *Diplomat*, organ of the National Board of Medical Examiners.

The activity of the nervous system is essentially rhythmic, consisting of a series of rapid alternations between resting and active states. There is, however, a difference between the electrical disturbance which travels as an impulse along the nerve fiber and the rhythmic electrical changes in the gray matter of the brain. The former spreads along the fiber as a monetary wave—a brief impulse followed by a brief interval of rest and recovery. In the cerebral cortex, on the other hand, instead of the abrupt "spikes," as observed in a record from an active nerve fiber, there are more gradual large electric oscillations which form a series of waves of smooth contour. Such variations can be automatically registered by delicate electrical instruments.

Electrical waves, that interlace like the ripples on the surface of a pond, occur in the gray matter of the brain and form the physical basis of our thoughts, according to the picture put forward by Prof. E. D. Adrian of

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## EDITORIALS

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### Health Audits

There are throughout the country a number of lay agencies which undertake periodic health examinations, often called health audits, by means of clinical and laboratory investigations by duly qualified physicians and their technicians. They make yearly contracts for this service to be rendered at regular intervals, with individuals as well as with corporations for the benefit of their employes. Formal reports are rendered with instructions relative to mode of life, diet, and exercise, but medicinal treatment is not instituted.

It is generally believed that such lay agencies are practicing medicine unlawfully and this belief has consistently been that of eminent lawyers.

The *A.M.A. Bulletin* of January 1934 quoting *Minnesota Medicine* prints an article of much interest in this connection. It appears that a lay agency conducting "health audits" sought an injunction restricting the Minnesota State Board of Medical Examiners from in any way interfering with the conduct of their business. The business consisted of periodic urinalyses and blood pressure tests. A licensed physician was in the employ of the plaintiff. A charge of ten dollars a year was made to the "subscriber." The District Court of Hennepin County sustained the demurrer interposed by the State Board of Medical Examiners, and among other things stated:

"Advising the subscriber for a fee as to certain improved habits of diet, exercise or living, although not accompanied by any medical prescription or treatment, is a violation of Section 5717, (Medical Practice Act)."

The Court also held that the plaintiff was engaged in the diagnosis or analysis of the condition of human health and this constituted a violation of the Basic Science Law. The Court stated that this law intends:

"That the patient shall be the patient of the licensed physician, not of a corporation or layman. The obligations and duties of the physician demand no less. There is no place for a middleman."

This order of the District Court was affirmed by the Supreme Court of Minnesota in a strongly worded opinion, to wit:

"1. The plaintiff, a layman, in conducting a 'health audit' for a fee for which he furnishes his subscribers with the results of urinalyses and blood pressure tests and either himself advised, or passed on to the subscriber advice from the pathologist who made the urinalyses, as to whether the results showed a normal or abnormal state of health and whether the subscriber should see a physician, in some cases advising as to diet, exercise, and habits, was practicing medicine unlawfully in violation of Sec. 5717 Mason's Minn. S 1927.

"2. In so doing he is practicing the science of healing in violation of Sec. 5705 Mason's Minn. S 1927, which defines the science as including the diagnosis or analysis of the condition of human health.

"3. Plaintiff's contract with his pathologist was illegal and in violation of statute and the public policy of the state."

It is probable that the laws of other states justify similar opinions and if so, this decision should be a strong incentive in restricting medical practice to duly licensed members of the medical profession.

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### "Cold Soup"

Former Governor Alfred E. Smith recently remarked that our many-lettered relief program resembles the result of a game of anagrams played with the alphabet noodle soup by one of the absent-minded professors of the "brain trust." That is humorous when the "noodle soup" grows cold, and the poor recipients of relief find that it is insufficient. The Nassau Medical News, organ of the Medical Society of the County of Nassau, makes some pungent observations on this situation.

The alphabetical relief organizations, it seems, have often put non-medical appointees

in charge of the medical relief work, a piece of stupidity sure to be injurious to both doctor and patient. The result is, as the Nassau editor observes, that "there is throughout the nation a rising tide of indignation on the part of the profession against lay dictatorship and against rules and regulations, interferences and meddlings, which result in bad medicine and the neglect of the best interests of their patients."

Imagine the feelings of a doctor dealing with some understrapper who returns his bills with childish criticisms and cuts the amount to less than his actual expenses. He is asked why he failed to state the sex of Mary Jones, and is instructed to violate the confidence of his patients by disclosing on the public records their exact ailments and treatments. He soon comes to feel that he or some other physician is better qualified to oversee medical relief than is "some clerk, himself on the relief rolls, whose knowledge of medicine was derived by careful listening to the Indian medicine man shows over the radio."

It would be only natural if the doctors tired of this stupid blundering and gave up the relief work, but the medical profession encounters so much stupidity and worse all the time, and is so used to giving its services freely to the needy, without money and without price, that it will no doubt continue. But the work will be hampered, damaged, and the ones who will suffer will be the indigent, who need all their available health and strength to cope with the crisis they are facing. The Government is aiming to provide them with the necessities of life, food, shelter, clothing, and is paying for them. Medical care is also a necessity of life, and, as the Nassau editor concluded strongly, it should be provided through existing channels and be paid for at current minimum rates.

### Wasting the Doctor's Time

Two classes of patients waste the physician's valuable time. One is made up largely of the fair and fragile sex; the other of the strong, silent, masculine persuasion. The time wasters in the first class are the ones filled with imaginary aches and pains and run to the doctor every few days, seemingly to get material for conversation at the bridge club. The con-

tinual discussion of operations and symptoms when ladies meet was once described by a wag as an "organ recital." Reputations of local doctors are made and unmade at such meetings, and it takes a brave physician to tell a garrulous patient that nothing is wrong with her but her imagination. Her little rapier would be busy at the next bridge meeting. But he emits a mental sigh when he sees her enter his office door.

The other class are exactly the opposite. They are the men who "never give in" to an illness—until it is too late to do anything. They are "too busy" to see a doctor till past help. Even if friends persuade them to take medical advice, they pooh-poo it, refuse to take any medicine, or go to a hospital, until it is almost time for the undertaker. "Never took a drop of medicine in my life," they say proudly, "and I'm not going to begin now!" Then the doctor is blamed for the result. With both classes, his best efforts are wasted, and he must often wonder why the two, the doctor-crazy and the doctor-shy, could not strike an average and gain sense and health at the same time.

### Thorns Crackling Down the Ages

The laughter of fools, so we have it on the highest authority, is "as the crackling of thorns under a pot." If we bend our ear to the echoes that float to us down the long corridors of time, we shall hear the crackle of the derisive hoots and yells of mirth that have greeted every advance in the art of healing.

We do not need to go any farther back than the days of our own Oliver Wendell Holmes for an illustration. Holmes, as everyone will recall, pointed out that puerperal fever was carried from patient to patient by the unclean hands of the physician. His words were met with hostility and ridicule; the crackle of the thorns rose to such a pitch that there was danger that his great discovery would go for naught. Then within five years what Holmes had stated on paper was proved true in practice by Semmelweis of Vienna. He forced his attendants to wash their hands in chloride of lime, and the maternal mortality in his hospital fell from 9.92 to 1.27 per cent. He had anticipated Koch and Pasteur in showing that infection caused blood poisoning; he had anticipated Lister's idea of antiseptics.

What happened? He was laughed at, discredited, derided. He was, in fact, hounded out of Vienna, and, broken in spirit, he went to Budapest, where the strain of the senseless persecution drove him insane and, in a few years, sent him to his grave.

The thorns were a crackle long before the time of Holmes and Semmelweis, however. Think of the temerity of an anatomist like Vesalius, who had the hardihood to assert, in the 16th century, that human beings did not have the same muscles as dogs and monkeys, and that womankind did not have the two-horned uterus of the brutes. He thought it better to dissect human bodies, rather than those of animals, to learn the secrets of the human frame. Absurd! Ridiculous! The crackle became deafening. Those who did not deride him thought it kinder to ignore him like a naughty child, and at thirty, tired of his petty persecutors, he threw his writings into the fire, gave up anatomy, and became a court physician to Charles V.

The guillotine, too, has played its part in the fool's comedy. The French chemist Antoine Laurent Lavoisier is associated in medical history with the establishment of the foundations on which the modern science of chemistry rests. His zeal for aiding and reforming the social and economic conditions of the people of France brought him into association with the farmers-general, who fell under the disfavor of the revolutionists, so his fate was sealed. It was a bit hard to charge such a man with any crime; Marat, therefore, accused him of stopping the circulation of air in the City of Paris! A sage comment on his fate was made by Lagrange, who remarked that it took only a moment to cut off the head that a hundred years would not suffice to reproduce.

The campaign even now against vaccination makes it easy to believe that in its early days laws were passed to prohibit it. Like other prohibition laws, however, they were overwhelmed by a popular wave of disregard and nonobservance, and the thorny crackle of mirth died down to the faint manifestation that we hear now and then from the genial George Bernard Shaw and others of a radical turn of mind.

Nothing, however wise and beneficial, seems to escape this idiotic and moronic opposition. We might think that the discovery of anesthesia would be hailed by everyone who had

witnessed the frightful agonies of surgical operations or who had heard the piercing screams of women in the pains of childbirth. Not at all. We read in "Mystery, Magic, and Medicine," by Dr. Howard W. Haggard, whence these facts are gleaned, that the Scottish clergy (men, of course) kindly pointed out that the scriptures plainly said that "in sorrow thou shalt bring forth children," so it was wicked to try to prevent it by anesthesia! But a resourceful Scottish physician, Dr. James Simpson, who discovered the anesthetic properties of chloroform, reminded the clergy that when Eve was born, God cast Adam into a deep sleep before taking the rib, so anesthesia was warranted by scriptural example.

Even Banting, it seems, had great difficulty in persuading the authorities at the University of Toronto that he was doing anything worth while, and nearly had to halt his work on the eve of his epochal discovery of insulin, which has revolutionized the treatment of diabetes. Walter Reed's name is made immortal by his work in the prevention of yellow fever, but the key fact, that the disease is carried by a mosquito, the *Stegomyia fasciata*, was advanced 19 years previously by Carlos Finlay of Havana. Finlay was regarded as a visionary. Mosquitoes! A good joke! Think of the thousands who died in those 19 years because fools had to have their laugh.

The worst of it is that the idiotic crackles will no doubt continue to the end of time. Every scientist must face them, fight them, conquer them. The hopeful side of it is that never in the history of the world has the human mind been more open to new truth than it is today. The tendency to take new discoveries seriously is growing. The crackle of the thorns continues, but it is less raucous. It happens more and more often that the scientist has the last laugh. And he who laughs last, laughs best.

### Cold Cures and Cold Cash

Our common enemy, is the common cold, according to a new little volume small enough to put in your pocket. Common as it is, however, it is uncommonly hard to handle. The old English doctor, when asked what he used for a cold, replied: "I use two dozen soft linen handkerchiefs," and one of

our own leading authorities today, Dr. Alphonse R. Dochez, when asked what he did for his own colds, answered: "I stay home, in bed." Both replies are confessions that this pestiferous little malady has the experts more or less baffled. Hence, the value of a handy volume about it, prepared "in consultation with eminent physicians." The editors of *Fortune* are the authors, it is titled, "Our Common Enemy: Colds," and it is published by McBride.

And a cold may not be such a little matter, either. It is complicated by the fact that 50 per cent of all disabling diseases start with a cold in their early stages. Scarlet fever, tuberculosis, meningitis and measles "are all fond of playing this practical joke on the medical profession." And what is more, Dr. Dochez is quoted as saying that "the more thorough study of this disease begins to indicate that it may be the keystone of that complex of ills, the causative agents of which gain entrance to the body by way of the upper respiratory tract."

The cause of the cold is obscure, but experts are quoted as agreeing with the German Professor Ductor Kruse, who announced in 1914 that it is caused by a "filtrable virus," visible under the most powerful microscope. A dissenting opinion is cited from "fiery little Anna W. Williams, M.D." of the New York Health Department, who is willing to blame the filtrable virus in some cases, but thinks most colds are instigated by some such disturbing factor as wet feet, an emotional upset, or not enough vitamins.

What to do, then? That is where we come down to "brass tacks." To "stay home, in bed," is not so easy for everybody, and the sufferer puts the problem up to the family physician, who is expected to prescribe a treatment that will cure the cold. Well, as we all know, cold vaccines have long been in use, and the medical laboratories stand ready to supply them. But authorities disagree on their values. Large corporations, too, which try to keep their workers fit, have tried inoculation, and "it is hard to discover what results, if any, these companies have had," we are informed. Indeed, "what can be learned is almost entirely negative." The New York Telephone Company, the New York Edison Company and the Curtis Publishing Com-

pany, however, give inoculations to those employees who wish it and believe that they are more helpful than not. Ultraviolet rays and chlorine gas have also had their advocates, but are regarded with more or less skepticism by the medical profession.

Diet has had intensive study. Alkalies like bicarbonate of soda have been prescribed, on the idea that colds are due to an acid condition of the body. Certain general rules for eating are unanimously accepted by cold students, so the authors of this volume report. To ward off colds, they agree, one should get plenty of vitamin A, found in cod liver oil, prunes, spinach, carrots, "and other depressing foodstuffs." Also enough vitamin B, which corrects acidosis and occurs in whole cereals, fruits, nuts and vegetables. The experts recommend, too, at least six full glasses of water daily and very little candy and sweets.

The practical proof of the value of this regimen appears in the statement that it is "the cornerstone of the New York Federal Reserve Bank's extremely effective anti-cold measures." The diet is supplemented by sunbaths and inoculations, snufflers with any fever are sent home, and, all in all, "the bank has come closer to whipping the cold problem than any other large office downtown." In a recent grip epidemic, the bank's absenteeism due to colds showed a peak of only 7 per cent, while the rest of Wall Street district was having peaks of 15 to 25. The Federal Reserve diet is alkaline, nonfatty, non-carbohydrate, strong in fruits, vegetables, and fluids.

The snufflers and sneezers should be bodily ejected from school, office, theater and restaurant, sent home and put to bed, and until they are, "the great American people will continue to catch some 100,000,000 colds every winter," we are assured. The cynical old medical joke is that "An untreated cold lasts 14 days, while a treated cold can be cured in a fortnight." While still on the humorous side of the question, the authors quote the old New England epitaph:

"Here lies our wife Samantha Proctor,  
She ketched a cold and would not doctor,  
She could not stay, she had to go—  
Praise God from whom all blessings  
flow."

Now we come to the "cold cash" part of the cold problem. The physician may not be able to find a cure for colds, but the advertising pages are crowded with them! One of them paid its stockholders \$6,000,000 in four years, and the last-published annual report showed \$3,704,606 net profits for the year. The ethical manufacturers, too, have their remedies, but with milder claims, such as "Indicated in some cases. . . . Has sometimes proved of value. . . . May, when properly prescribed." One strictly ethical house has 150 products more or less directly designed to combat colds.

Almost all the cold remedies, we are assured—ethical, unethical, and even doctors' prescriptions—contain much the same ingredients and do much the same jobs. A country druggist may take a doctor's prescription that has proved helpful, put a catchy name on it, with a fancy label, start an advertising campaign, and in a few years roll in wealth. The last half of the book gives a review of the cold remedies that flood the market and make their manufacturers rich. Some of them you sniff, some you suck, some you gulp, some you swallow, some you rub on, and at the end of the fortnight the cold departs and the gullible victim is ready to write a testimonial.

### Patients Who Swindle the Hospitals

The tidy sum of \$600,000 was lost to the taxpayers, "through the grafting of people who have lost all sense of civic responsibility," in the three general acute hospitals of Bronx County in 1933. That is the amazing verdict of the committee that has been investigating the financial resources of patients applying for free treatment at the Morrisania City Hospital. The committee was made up of Dr. Nathan B. Van Etten, Medical Director of the hospital, Dr. Frederick Flynn, President of the Hospital, and Dr. William Klein, President of the Bronx County Medical Society, certainly a personnel to inspire confidence in the findings. The Bronx County Society contributed \$500 toward the expense of the investigation and the medical staff of the hospital contributed more than \$600.

The cheaters who get undeserved free treatment at the public hospitals do not cheat the

taxpayer only. They cheat the doctors who give their services free to the public hospitals, and they cheat the indigent poor who cannot find room in these overcrowded institutions. If refused free treatment, they would soon be found in the waiting rooms of the regular practitioners, where they belong.

A committee last year figured the value of the free services given by the physicians on the staff of one city hospital in the Bronx at \$1,347,155 a year, and as the Bronx has two other city hospitals of about the same census, the total for the three would come to over \$4,000,000. We must keep it in mind, too, that the doctor is also a taxpayer, so he takes the loss in his practice, in his free service, and in his tax bill. And what is true in Bronx County is no doubt true, in greater or less measure, throughout the State, so we have a situation here well worth our attention.

The agitation started in April, nearly a year ago, and the committee engaged a credit service bureau to study the cases of 1,000 unselected patients applying for hospitalization. Each patient, when applying, was asked to answer a questionnaire which has been for several years in successful use at the Buffalo City Hospital. It requires not only the patient's name and address, but his occupation, earnings, rent paid, arrears, number of rooms and landlord, for present and last previous residence, fraternal affiliations of himself and others in the family, "children elsewhere," church, pastor, employer, property, mortgages, taxes, insurance, debts, aid received from agency, lodge, union, compensation, etc. The applicant is also required to promise that if able at some future time, he will pay for the present treatment.

Investigation by the credit agency revealed that 583 or less than 60 per cent of the 1,000 applications, were really unable to pay, 118 were able to pay, 107 were able to pay with the help of the family, 85 had given false addresses, and 107 were "possibly capable of paying a physician or of obtaining credit from a physician or of paying minimum rates in a semiprivate institution."

Taking these findings as a fair sample of conditions at the three city hospitals in the Bronx, the committee figures the total of the huge hospital swindle at \$600,000. The physicians who freely attend these grafting patients, says the committee, "defraud them-

selves and practitioners who have no hospital connections by complaisantly serving these patients with the real luxuries of excellent medical care without protest and in a spirit of submissive recognition of the futility of trying to do anything about it." This is a mistaken attitude, we are assured. Physicians should cooperate "in a sincere effort to correct these abuses."

It would be hard to put more wisdom into fewer words than the committee does when it remarks: "If the admission of unworthy applicants can be controlled, overcrowding will be relieved, the poor will have better treatment, nongovernmental hospitals will be helped, and private practitioners will have more patients, and the city of New York will save a very large sum of money."

## VICTORY OVER T. B. NOT YET WON

Leaders in the fight to conquer tuberculosis warn us that any attitude of self-satisfied complacency over the fine record made thus far may have grave results. There must be no relaxation, no let-up, in the grim struggle. The *News Letter* of the Suffolk County Medical Society prints a warning that while tuberculosis has lost its preeminent position as the master killer, there is no justifiable reason for anyone to be satisfied with the present situation.

It has been estimated that the annual tuberculosis cost in the United States approximates one billion dollars. Almost 315 million dollars are wasted annually through loss of future earning power caused by death, 300 millions more through loss of wages, and an additional 150 millions for treatment. To this colossal outlay must be added the incalculable cost in direct and indirect misery and suffering chargeable against the Great White Plague.

No one appreciating these facts can complacently view the present-day tuberculosis problem. And this, even in the face of a net saving of at least 1,100 lives a year due to sanatorium care of tuberculosis cases, and the further fact that of the 800,000 persons who have passed through the sanatoria in the United States during the last ten years, nearly 600,000 are still alive.

It should be observed that, in spite of the really great strides which have been made against this malady, much more needs to be done.

... protection of the  
... districts, and  
... hygienic living  
have played important parts in the great fight thus far made. However, the situation now demands, and indeed has demanded for years, that the individual citizen has a clearer conception of his personal duty in the fight which he now possesses.

Why not set up an active credit agency in every hospital to examine the financial responsibility of applicants for free treatment? That is what the committee urges, and it would seem from these figures that it would more than pay for itself. Besides, it is clear as daylight that these grafters are suffering from a moral illness that is as serious as any physical malady that brings them to the hospital door. Their disease of the soul needs treatment, too, something sharp and decisive, to awaken them to a sense of justice and common honesty. Conditions in Bronx County are evidently in for a housecleaning, started by the County Medical Society. A statewide campaign along similar lines by the county societies might have salutary results.

The common danger signals of tuberculosis are: A continuous tired feeling, loss of weight, a persistent cough, indigestion, pain in the chest, and spitting of blood. These signals do not necessarily mean that tuberculosis has developed, but they call for an immediate professional check-up.

It is at this point where thousands of persons fall down. Tuberculosis in the homo is thus spread, particularly to children; and the vicious circle remains unfortunately intact.

When the average citizen fully realizes that tuberculosis is a preventable disease, that it is not directly inherited, that it is acquired by direct transmission of the tubercle bacillus from the sick to the healthy, and thus recognizing early symptoms, takes the necessary steps to prevent the spread of the infection, the death rate from tuberculosis will definitely and satisfactorily diminish.

Public health, represented by clinics and sanatoria, has and will continue to do much, but personal cooperation by way of early recognition and control is the next step forward.

## ELECTRICITY USED BEFORE CHRIST

Electricity was used therapeutically as early as the third century before Christ, Dr. Leo Pariseau, radiologist of Montreal, told the Annual American Congress of Radiology, reports the *Diplomate*. Doctor Pariseau traced the history of this early use of electricity down to the present. Doctor Pariseau said that first mention of this use of electricity was found in Aristotle's book, *De Natura*. The electricity from a funny monster called the torpedo fish, whose live body was said to possess qualities of healing pain. From Aristotle down to the sixteenth century various writers told of the same fish, now known as the electric ray. The word electricity, however, was not used until William Gilbert, physician to Queen Elizabeth, coined it.

# Correspondence

*Anonymous letters will not be noticed. All communications must carry full name and address of the writer, but these are omitted on request.*

To the Editor:

As one in the ranks of the Medical Society of the State of New York, I wish to congratulate the editors on the new format of the Organ of our Society. The smaller page and general arrangement of topics are excellent. The type in the first three issues was too small to permit easy reading but I am pleased to note from your announcement that this is to be corrected in the next issue. Its size at present is convenient and the reading material selective. I trust the Editors will continue this policy and not permit the JOURNAL to become too large and bulky.

JAMES M. O'NEILL, M.D.

To the Editor:

One of the most serious complaints received by this Authority, is the practice of rebating or the giving of commissions by the retail pharmacist to the physician and the latter's acceptance of same.

While it is perfectly ethical and considered as no violation of the Retail Drug Code for a retail pharmacist to supply a physician with merchandise below his cost, the gratuitous payment of any sum by the pharmacist to the physician based upon the number of his prescriptions filled, is not only highly unethical but constitutes a definite violation of the Code of Fair Competition for the Retail Drug Trade.

Our purpose in writing to you, is to secure the necessary publicity through such medium as may be at your command, with the assurance that your doing so will render a most distinctive service to our beloved profession.

We feel certain that you will agree with us that such practices, while not reflecting a general condition, show an utter disregard of moral or ethical standards and that every effort should be bent toward the elimination of same.

May we therefore ask that you be kind enough to give this condition the publicity it deserves.

Should you desire any additional information, we shall be pleased to give it to you upon request.

RETAIL DRUG CODE AUTHORITY FOR N. Y.  
(Signed) Samuel A. Weiss,  
Executive Secretary

To the Editor:

Permit me to add my congratulations for what you have done to the Journal to those of others. From its size, which is more convenient; its cover, which is more distinctive; its better quality of advertising, which reform was needed; to the terseness of the original articles and the editorials, the reading of the magazine has become a pleasure and not

a duty. I do not call for a larger type, however, but that seems to be requested by many.

There was a small note in a corner of the last issue which reminds me of a controversy that I recently had with the Public Service Commission and the Westchester Lighting Company (our local branch of the Consolidated group). The note was about residential telephone charges. I have paid residential rates all along, but I am glad to see our Society call attention to it.

About eighteen months ago a so-called reduction in electric rates was "ordered" by the above P.S.C. I did not note my bills to be any lower, but I got them on buff paper instead of the former white. After a while I woke up to the fact that I was now paying commercial rates—the same as the former domestic rates, hence no reduction (such as it was).

Getting no satisfaction from the local lighting company, I wrote to the P.S.C. They sent as their investigator an amiable gentleman from the Westchester Lighting Company! I was shown that the P.S.C. had "ordered" commercial rates for all physicians—office in home or elsewhere. This notwithstanding that I had installed a power line for the office appliances. Since another physician has gone over the same road.

As I have often wondered—what public service does the Public Service Commission perform? I have some dark thoughts which I shall not commit to paper. It seems what is sauce for the goose—the Telephone Company—is not sauce for the gander—the Electric Trust. Incidentally, I think the telephone rates are quite fair.

JOHN PHILIP TOLAND, M.D.

To the Editor:

In the "Journal" of Feb. 1st, an editorial comment on sterilization does not quite tell the whole story. May I be allowed to continue the discussion somewhat further?

Darius Green was the humorous product of the mind of J. T. Trowbridge who showed his genius also in other writings. No doubt he would have allowed Darius to successfully negotiate the air had he confidence the public mind would discredit the act.

Edgar Allen Poe, entertaining the same scepticism, thought it wise to frankly label his eight passenger air voyage across the Atlantic "A Balloon Hoax." Was he less a genius as a writer, or did he hesitate to deceive his readers.

When the scientist asked Capt. Nemo, navigator of the "Nautilus" the source of his motive power, he pointed through a porthole and replied, "Electricity," a simple anticipation in the imagination of a genius, the development of power in the future internal combustion engine and storage battery.

Madison Grant says "to imitate or adopt



what others have invented is not genius but mimicry." Consequently with Trowbridge a genius, the Wright brothers were imitators.

Men marvel at genius and believe it a very desirable human quality though Havelock Ellis has observed that about five or six per cent of men of genius have lacked sanity.

Tennyson in "Locksley Hall," with prophetic vision anticipated what occurred more than one hundred years later over France, in the following sentence.

"Heard the heavens filled with shouting  
And there rained a ghastly dew  
From the nation's airy navies  
Grappling in the central blue"

Such minds as referred to offer no menace to civilization and do not suggest sterilization. I am more afraid of a legislator who promulgates a law making it legal for a doctor to prescribe a pint, and making him a criminal if he prescribes seventeen ounces. Criminals are not made by law, neither should sterilization become a question of sentiment. Neither does it contemplate criminology. The question of behavior may be a criterion but the profound issue is the survival of American civilization. We are certainly living in a much too sentimental age. The unfortunate from any cause appeal strongly to our sympathy. Thomas Jefferson was influenced by this instinct when he wrote in the Declaration of Independence "all men are created equal," a very mistaken and erroneous idea.

Lothrop Stoddard says: "The idea of natural equality is one of the most pernicious delusions that has ever afflicted mankind. . . . Nature knows no equality. No two individuals are ever precisely alike. . . . The innate differences between members of a low grade savage tribe are as nothing compared with the abyssal difference between an idiot and the genius who coexist in a high grade civilization."

If we should bend our efforts to increase the birth rate among the genius producing class, while perhaps . . . . . able, we would . . . . . faculties.

While . . . . . among the Spartans, it failed signally under moral criticism when undertaken in central New York. Under serious consideration, man has only two methods of choice that are practical. One is segregation and the other sterilization.

We . . . . . Middle Ages to die . . . . . in death, life . . . . . of the progress . . . . . of society eliminated them, leaving for the perpetuation of the race the stupid and brutal.

Who would think of commending the civilization of Spain of today? It is said the Inquisition condemned to the stake or imprisonment an average of one thousand persons annually. The condemned were not among the lower classes. No doubt they were among the class that should have been preserved for the evolution of a better race. A similar elimination of brains and intelligence took place in northern Italy and in France where hundreds of thousands of desirable Huguenots were murdered or driven into exile.

This method of decimating the wellbred and undermining a civilization has proven all

too successful in past histories. It served to maintain, so to speak, a balance of power in the undesirable class. The same result is now uneasily threatened through our methods inspired by sympathy, of showering attention on the unfortunate victims of ill breeding and at a tremendous expense, housing them in attractive almshouses, asylums, penitentiaries, state schools and other institutions, so carefully named as not to offend an esthetic sense.

It is said if you touch a man's pocket book, you touch him in a vital spot. At no time in the history of America has this been more real than at the present. Taxation, enormous now, bids fair to become prodigious. The government is even now shaking the tree for billions of dollars to put in the budget. One out of every twenty of our population is receiving pay for his part in public service.

In the State Public Health Report for 1932, Dr. Parran estimated adequate care for syphilitic cases for one year would cost the state sixteen million dollars. At the present time, we have nearly sixty upstate clinics and are admitting new cases at the rate of five thousand annually and administering about one hundred and fifty thousand treatments. In state institutions, there are approximately two thousand patients suffering from general paresis, the annual cost of care of these cases is approximately eight hundred thousand dollars. The cost of equipping state institutions is approximately four thousand dollars per capita. This is for general paresis as reflected in cases of syphilis. The facilities of state institutions for the care of cases of general paresis are valued at about eight million dollars.

The foregoing figures represent only a small part of the economic loss and expensiveness to the state from syphilis alone. We all know that syphilis is one of the greatest underlying agencies for the destruction of civilization.

That a spirit of rebellion is growing in the hearts of the tax-burdened people in some sections of the country is evidenced in sterilization laws which have been enacted in many of our states. There are objectors, of course, but they are not the ones who are taxed to the loss of their farms and property to support these institutions.

One fault is, sterilization is not commonly understood. It should be explained that the operation is not to emasculate.

Civilization is complex. It involves humanities which cannot come out of ill bred, uncultured and tax-oppressed people. Those conditions breed jealousy, discord, racketeering, murder and war.

If our civilization is to succeed and last longer than others that have crumbled in the past under no greater stress, attention had better be centered upon the golden rule in the science of Biology, rather than the shifting golden dollar of the present day. A country of prisons full of Capones, penalized for a time only to be released to breed more of their kind, and also as vicious a type of kidnappers and racketeers, constitutes a deplorable legacy to hand down to posterity, only to undermine our civilization.

G. MASSILLON LEWIS,  
Vernon, New York.

# Society News

## Committee on Legislation

### Bulletin No. 5

Since our last bulletin the following bills have been introduced:

Senate Int. Number 505—Berg, to amend the Education Law by extending to six months after May 17, 1934, time for applying for license to practice physiotherapy. Referred to the Education Committee.

Senator Berg has carried this bill for several years. He wishes to open the examination for physiotherapists on the ground that several clients of his could qualify but for some reason or other they were unable to make application during the time allotted by the law.

Senate Int. Number 514—Palmer; Assembly Int. Number 626—Cornaire, to amend the Vehicle and Traffic Law by providing exemption in favor of ambulances shall apply only to ambulances used exclusively to carry sick or injured persons. Referred to the Internal Affairs Committee.

Senate Int. Number 559—Wald, to amend the General Municipal Law by providing no person in charge of ambulance maintained by hospital subsidized in whole or part by public moneys shall refuse to answer call therefor, penalty also made to apply to person by whom call for ambulance is received or to whom call is communicated, and relative to defense to prosecution. Referred to the Cities Committee.

Senate Int. Number 566—Berg, to amend the Education Law relative to entrance regulations to professions by providing Regents may, where practice is a prerequisite to license, receive evidence of such practice in whatever state or country applicant may have been engaged in. Referred to the Education Committee.

Senate Int. Number 568—Esquirol—Assembly Int. Number 695—V. C. Lewis; adds new sections to the Public Health Law for control of state tuberculosis hospitals by Health Department and relative to administration, powers of superintendent, appointment of consulting staff and aid to county hospitals. Referred to the Health Committee.

Senate Int. Number 569—Esquirol; Assembly Int. Number 694—V. C. Lewis, to amend the State Finance Law for fiscal supervision, estimates, accounts and vouchers of the three tuberculosis hospitals in Health Department. Referred to the Finance Committee.

Senate Int. Number 571—Patri, adds new section to the General City Law, prohibiting milk and cream inspections outside the state by the state and cities at state or city expense. Referred to the Cities Committee.

Senate Int. Number 577—Byrne; Assembly Int. Number 754—McDermott, adds new section to the Education Law for governing sale

and distribution of lye and other caustic substances in containers for household use. Referred to the Education Committee.

This bill passed one House last year but got lost in the shuffle at the end of the session in the other House.

Senate Int. Number 596—Esquirol; Assembly Int. Number 782—Moran, adds new article to the Public Health Law for licensing bakers and dealers in bread and pastry. Referred to the Health Committee.

Senate Int. Number 621—H. L. O'Brien, to amend the Workmen's Compensation Law by making provision for presumption as to cause of an occupational disease, apply also to employees coming in direct contact with any of the substances mentioned in schedule. Referred to the Labor Committee.

Another occupational disease bill.

Senate Int. Number 622—Wald, to amend the New York City Inferior Criminal Courts Act by providing court on motion of defendant shall order making of one or more blood grouping tests, results of such tests to be received in evidence. Referred to the Codes Committee.

Assembly Int. Number 622—Wadsworth, adds new section to the Public Health Law for encouraging production and sale of clean, fresh and natural milk, as well as pasteurized milk, derived from healthy cows, production and sale not to be prohibited or burdened with unreasonable restrictions by state or local health officers, and requiring Public Health Council to prescribe reasonable standards and regulations. Referred to the Health Committee.

Mr. Wadsworth says that he has introduced this bill in the interest of the small farmers in his vicinity who could sell raw milk but would find it financially difficult to pasteurize it.

Assembly Int. Number 716—Potter, adds new section to the Lien Law for liens of hospitals for taking care of persons injured as result of negligence of another person or corporation. Referred to the Judiciary Committee.

This is one of the hospital lien bills carried by Mr. Close last year.

Assembly Int. Number 741—Coughlin, Workmen's Compensation Law, relative to subrogation to remedies of employees. Referred to the Labor Committee.

This amendment makes provision for an award where a third party is involved and defines how the medical services that may have been provided by the employer shall be deducted by the third person or corporation from the sum paid in release or judgment to the injured employee or his dependents.

Assembly Int. Number 742—Coughlin, amends the Workmen's Compensation Law by adding to list of occupational diseases for

which compensation is payable, all disabling diseases and disabling illnesses. Referred to the Labor Committee.

Another blanket occupational disease bill.

Assembly Int. Numbre 761—Schanzer, amends the Public Welfare Law by providing occupancy and ownership of a single family dwelling by a person shall not in itself make him ineligible for relief and care at expense of public welfare district or the state. Referred to the Ways and Means Committee.

#### ACTION ON BILLS

Senate Int. Number 155—Berg—practice medicine, person pardoned—has been advanced to third reading in both Houses.

Typewritten copies of the proposed chiropractic bill are circulating.

The osteopathy bill has been introduced in the Assembly by Mr. O'Mara—Assembly Int. Number 715.

Remember the chairmen's conference on Tuesday, February 13th, 10:00 A.M., DeWitt Clinton Hotel, Albany.

#### Committee on Legislation

##### Bulletin No. 6, February 16, 1934

Since the issuance of our last bulletin the following bills have been introduced:

Senate Int. No. 630—Byrne; Assembly Int. No. 820—Condon, Labor Law, establishing an unemployment reserve fund to which employers must contribute sum equal to 3 per cent of payroll of employees qualified to receive benefits, agreement as to contributions by employees being void; and appropriating \$40,000. Referred to the Finance Committee.

Senate Int. No. 640—Crawford, Agriculture and Market Law, defining preserves, jellies and apple butter and providing that addition of pectinous material in preparation of fruit jams, preserves or jellies shall not be deemed an adulteration of food. Referred to the Agricultural Committee.

Senate Int. No. 690—Esquirol, amends the Education Law by providing that an applicant for examination for registered nurse must be citizen of the United States, except that this provision shall not apply to nurses who give their services free of charge to a charitable or religious agency. Referred to the Education Committee.

Senate Int. No. 730—Fearon; Assembly Int. No. 1011—Wadsworth, Tax Law, imposing a 2 per cent tax on gross receipts of all business and service transactions with certain exceptions, 90 per cent of revenue to go to cities, towns, villages and school districts outside cities and appropriating \$5,000 for Tax Department and \$25,000 for Audit and Control Department. Referred to the Finance Committee.

This is the long-expected 2 per cent sales tax. Physicians are not exempted as they were last year.

Assembly Int. No. 806—Neustein, Executive Law, to permit without censorship or payment of fees, exhibition of "current event," scientific and educational films and making other

provisions relative to motion picture censorship. Referred to the Ways and Means Committee.

This is the second time this bill has been introduced. Our interest in it is that it would permit the use of educational films without censorship or payment of fees.

Assembly Int. No. 814—Neustein, amends the New York City Inferior Criminal Courts Act, by enlarging jurisdiction of special sessions courts held by city magistrates to include violation of Art. 22, Public Health Law, where defendant is charged with possessing narcotics and pleads guilty. Referred to the Codes Committee.

Assembly Int. No. 901—Rapp, adds new section to Indian Law, requiring State Social Welfare Department to employ competent physician at \$1500 a year to give medical care to Indians on Tonawanda reservation. Referred to the Ways and Means Committee.

Assembly Int. No. 969—Bartholomew, Workmen's Compensation Law, giving claimant right to bring claim before any court having jurisdiction, provides appliances shall not reduce compensation; for payment of award within 10 days of date of receipt of notice, payments not to cease without order, carrier's physician not to be present at examination, all referees to be lawyers with 10 years' experience and making other changes. Referred to the Labor Committee.

The section of this amendment which is particularly interesting to physicians is that which provides that the carrier's physician shall not be present when the patient is examined by the Department of Labor's expert. This bill, however, does not exclude the family physician from the examination.

#### HEARINGS

Feb. 27—2 P. M.—Joint hearing on all labor bills.

Feb. 28—2 P. M.—Antivivisection bill—Assembly Int. No. 364—Breen.

Mar. 6—2 P. M.—Pharmacy, practice of—Assembly Int. No. 415—Dunkel, drugs, barbituric acid, etc.—As. Int. No. 417—Dunkel.

On Thursday, February 15, the Regents accorded the chiropractors an opportunity to explain the bill they propose introducing this year. Their spokesman was Julius Henry Cohen, at one time attorney to the Port Commission of New York City. The Regents also invited the Medical Society to make such comments as it might.

Flaherty asked Dr. Varen, a member of the State Board of Medical Examiners, and Dr. Aranow, Chairman of the Legislative Committee, to make such objection as the Society would like to have made to the proposed bill. The principal objection was leveled at that section which would oblige the Regents to appoint a special examining board to be composed entirely of chiropractors, admitting of neither physicians nor osteopaths. Representatives of the Medical Society, examining Board employed is as possibly be; and are willing that shall be expati-

ined in practically the same subjects as are the medical men examined in at the present time, there is no necessity for a special board. The chiropractors made a point of having their candidates examined in the principles of chiropractic, but since the State Board makes no examination in *materia medica* or the principles of osteopathy, there would be no necessity of examining in the principles of chiropractic. We urged the Regents not to be persuaded to lower our present high educational standards. Mr. Cohen, in closing his remarks, stated very emphatically that the chiropractors would not submit to an examining board which included medical men. The Regents have not as yet announced any opinion or decision upon what they heard.

Just a word about the conference of county chairmen which was held in Albany on Tuesday. Twenty-five counties were represented and we had a very interesting and profitable conference. We reviewed all the bills in which we have an interest and discussed their merits and demerits. We are sorry that every county could not be represented, but we appreciate the difficulty of arranging a time that would suit all. If those chairmen who were not present would like additional information as to what transpired at the time, we shall be glad to answer any questions they may have to ask.

The particular bill for you to concentrate upon at the present time are:

#### APPROVED

Senate Int. No. 66; Assembly Int. No. 296: Hospital lien bill, including physicians.  
Assembly Int. No. 289: Free choice of physician.

#### DISAPPROVED

Senate Int. No. 45; Assembly Int. No. 141, No. 169, No. 570, No. 728: Occupational disease bills.  
Senate Int. No. 235; Assembly Int. No. 419: Labor clinics.  
Senate Int. No. 336: Antivaccination bill.  
Senate Int. No. 450; Assembly Int. No. 715: Osteopathy bill.  
Senate Int. No. 505: Physiotherapy bill.  
Assembly Int. No. 364: Antivivisection bill.

#### Conference of Chairmen of County Society Committees on Legislation

Twenty-five County Society Legislative Committees were represented at a conference held by the State Committee in Albany on Tuesday, February 13. About half a dozen others wired or wrote their regrets at not being able to attend.

At the opening of the meeting Dr. Lawrence briefly explained the rather intricate relationship of the various relief organizations now operating throughout the state (see below).

Following this, a very thorough review was made of the bills now before the Legislature which have a medical aspect. Each bill was read and its intent discussed, after which approval or disapproval was recorded for the instruction of the State Committee. Several methods of procedure for securing effective action from the legislators were discussed.

It was decided that each chairman should have members of his own committee communicate with his legislators and members on the important committees, not only opposition or approval of bills, but accompany each with a brief explanatory statement.

Some of the bills toward which concerted action was definitely planned are the following: For *approval*, that hospital lien bill in which physicians and nurses are recognized; for *disapproval*, the bills on antivivisection, antivaccination, physiotherapy, osteopathy, creation of a state insurance fund, creation of rehabilitation clinics by the Department of Labor, investigation of the Workmen's Compensation Law, and 2 per cent sales tax.

There were also present at the conference, Dr. Bedell, President-elect; Dr. Irving, Secretary of the Journal Management Committee; Dr. Morton, Chairman of the Committee on Medical Research; Dr. James N. Vander Veer, Past-President. Dr. Fisher, Past-President, was present as chairman of the Oneida County Society Legislative Committee. A telegram was read from Secretary Dougherty expressing his regrets at not being able to be present.

#### CHANNELS FOR RELIEF

Under the new Welfare Law, welfare commissioners are obliged to provide medical attention for the indigent, as well as food, clothing, and shelter. The law requires that the welfare commissioner appoint a physician or physicians to furnish medical care either in the home or in a hospital, but physicians are expected to receive written authorization from the commissioner before making more than one visit. Hospitalization must be authorized by the county commissioner. Fees are to be in proportion to the regular fees ordinarily charged by physicians for work in that economic class. But the welfare commissioner may not be able to pay such fees with the budget at his disposal. Therefore, the physicians should, through conference with the commissioner, arrange for satisfactory compensation.

The Temporary Emergency Relief Administration (TERA), from the funds made available through the sixty-million-dollar bond issue, assists the welfare commissioners by refunding to them 40 per cent of the amount expended on home and work relief. Naturally, this refund applies to funds expended in providing medical care *in the home*. It does not apply to hospitalization charges or to salaries paid physicians where home relief is provided in that way. Thus, there is no refund made to municipalities employing physicians on contract with definite salary.

In December the Federal Government undertook to assist the states in providing work for the indigent by creating the Civil Works Administration (CWA) to administer a portion of the funds appropriated to the Federal Public Works Administration. The CWA offered to take over from the welfare commissioners and the TERA all persons employed on work relief and pay them from Federal funds. The state accepted the offer and the TERA instructed the welfare commissioners that they could divert to home relief the money that they

had been devoting to work relief and the TERA would in the future refund them, instead of 40 per cent, 66 2/3 per cent of the amount expended. Persons employed on work relief were insured by the municipalities employing them, the insurance being carried either by the State Fund or commercial companies. When they were transferred to the CWA and paid by Federal funds, the insurance was assumed by the United States Employees' Compensation Commission, which promptly sent instructions to all directors of CWA works to provide medical care for the injured by conferring with the local medical organization and having a list of physicians qualified and willing to do this work made available so that the director could select from the list when physicians or surgeons were needed, and provision was made that the injured person might make a choice of physician if he desired.

Physicians working under the CWA are furnished report sheets upon which they are expected to make frequent reports of the services they render, and compensation is provided at the rates ordinarily charged for persons in that economic class.

Another group, working under the Civil Works Service (CWS), are provided medical care by the state, the insurance being carried by the State Fund. Our information is that the State Fund does not admit of free choice of physician by the employee, but has advised the directors of certain designated physicians to be employed if medical service is required.

There is another form of medical service available under the CWA. A community may have a medical project, as for instance, supplementing the dispensary service at a stipulated salary. An example of this is found at the Buffalo City Hospital where twenty-six physicians were employed for two hours a day for six days in the week at \$1.75 per hour, to assist with the dispensary work.

Dr. Lawrence urged the chairmen to do what they can to arouse interest among the physicians of their several County Societies in the administration of these methods of relief and especially to do what they can to encourage the widespread use of the methods which permit patient selection of his own physician.

JOSEPH S. LAWRENCE,  
*Executive Officer*

#### COMMITTEE ON PUBLIC RELATIONS

The Chairman addressed the following letter to the County Societies under the date of February 12, 1934.

Dear Doctor:

When physicians collect fees for services performed in these days they may collect from (1) the patient himself, or they may collect from (2) an insurance company if the patient is employed in industry, or from (3) the State Fund if he happens to be employed on the state highways, the CWS, or in industries carried by the State Fund, or (4) by the United States Employees' Compensation Commission if he is employed under the CWA, or (5) from the welfare commissioner if he is unemployed and an indigent.

Naturally, the question of fees becomes a very important factor when there are so many

employers and not a little influence is exerted by the fact that until recently the physician was donating medical care to some of these people. Some County Societies have endeavored to create and employ a schedule of fees, but have found it very difficult to devise a schedule that could be used satisfactorily at all times.

The Committee on Temporary Emergency Relief has had numerous conferences with state officials administering the TERA funds, the Committee on Medical Economics has given the general subject of fee schedules a great amount of profound study and has assisted a number of County Societies in adjusting their difficulties, and the Standing Committee on Public Relations has approached the problem from the point of view of establishing satisfactory cooperating relationships between the governing bodies of the various official agencies administering the several relief funds and the leaders of the County Societies.

On the subject of fee schedules, the Public Relations Committee adopted a resolution which was presented to and adopted by the Executive Committee of the State Society and which is now offered to you for the consideration of your County Society. It follows

#### COMPENSATION OF PHYSICIANS FOR SERVICES RENDERED INDIGENTS

"Physicians are not concerned with the care of indigents for the purpose of gain but to render needed service in the prevention and treatment of disease. Compensation sufficient to protect physicians against economic loss is rightfully expected and should be provided from public funds.

The Public Relations Committee doubts the wisdom of adopting a fee schedule—in itself—as a guide for compensating physicians for the care of indigents. The committee is of the opinion that a committee in each County Society should establish close cooperative relationship with government representatives. In conference they should decide the compensation to be paid physicians.

It is to be especially stressed that compensation for the care of indigents will be minimum and not representative of charges made by physicians for like services rendered patients supporting themselves from personal funds.

Cooperation between government welfare officials and duly elected representatives, preferably the Public Relations Committee, of the County Medical Society, should result in a satisfactory agreement."

JAMES E. SADLER, *Chairman,*  
*Committee on Public Relations*

#### PRIZE ESSAY ANNOUNCED

The Medical Society of the State of New York takes pleasure in calling to the attention of the medical profession of the State the following prizes which are offered annually and the winners announced at the Annual Meeting of the House of Delegates.

The *Merritt H. Cash* prize will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York, who are residents of New York State.

The essay shall be typewritten or printed, and the only means of identification of the author shall be a motto or other device. It shall be accompanied by a sealed envelope having on the outside the same motto or device, and containing the name and address of the writer.

The *Lucien Howe prize* will be presented for the best original contribution to our knowledge of surgery, preferably ophthalmology, and is not limited to members of the Medical Society of the State of New York.

The method of presenting the communication and of awarding the prize shall be substantially the same as that followed in regard to all prize essays. That is, the communica-

tion shall be typewritten or printed, and the only means of identification of the author shall be a motto or other device. It shall be accompanied by a sealed envelope having on the outside the same motto or device, and containing the name and address of the writer. If, in any year, the committee does not deem any essay or communication which is offered worthy of the prize, then it shall not be awarded.

Essays should be sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 2 East 103rd Street, New York City, not later than April 15, 1934, in order to be judged before the Annual Meeting on May 14, 1934.

### ‘BRAIN SIZE AND MENTAL ABILITY

The question whether the size of the brain denotes mental ability is agitating British psychologists as a result of measurements that have been made of the brains of African natives in the Kenya Colony (British). As reported by the London correspondent of the *Journal of the A. M. A.*, Dr. H. L. Gordon, visiting physician to the Mathari Mental Hospital, Naarobi, Kenya Colony, determined the cranial capacity of 3,444 unselected natives, representing the average of the Kenya population. The average cubic capacity was 1,316 c.c., against the European 1,481. He also found that from the ages 10 to 20 years the average yearly growth of the native brain was 8.5 c.c., against the European 17.7. Further, after puberty the curve of growth of the European brain rises steeply but that of the native scarcely at all. The measurements and statistical data were submitted to Mr. Walter, statistician to the conference of East African governors. Dr. Gordon carried his observations into the laboratory with the expert help of Dr. F. W. Vint, pathologist to the Kenya government. He found that the brains of 100 normal males averaged 150 gm. less than Europeans. Dr. Vint's results (to be published in the *Journal of Anatomy*) showed that the cortex of the native brain was 15 per cent less than of the European and that its cells were smaller, less well formed and less well arranged than those of the European. Further, although there was no reduction in the number of cells in any given area, the native cortex showed predominance of undifferentiated cells. Finally, Dr. Gordon found that, while dementia praecox is unknown among natives living their own life, every native in which it occurred had received some European education. In view of the rapid introduction of European civilization into Africa, these observations are important. Dr. Gordon holds that “the hand of science, with all its power, has not yet been held out to enable the native to rise.”

Dr. Cyril Burt, professor of psychology at University College, London, disagrees with the conclusion that efforts to educate the natives may induce insanity, because it is contrary to current theories and current practice. The notion that mental ability can be gaged by measuring the skull has been abandoned. The

correlation between skull capacity and inborn intelligence is certainly positive but far too small to be of diagnostic value. The skull capacity varies far more closely with physical characteristics—height, weight, age, sex, race—than with mental characteristics. The greater part of the brain is concerned with physical and not intellectual activities. Dr. Vint's observations on the cells of the cortex are more suggestive, but he is far more cautious in drawing psychologic inferences than Dr. Gordon and says that “the functions of the human brain are still wrapped in mystery.” It is commonplace among psychologists to-day that mental characteristics should be judged by mental symptoms, not by physical. Professor Burt quotes from Dr. Oliver, who has recently described in the *East African Medical Journal* tests performed in two large schools in Kenya, one native and the other European. He found that the average native intelligence was only about 85 per cent of the European; nevertheless, 14 per cent of the natives actually surpassed the European average. Moreover, the fathers of the European children were largely government official and professional men, which should give a somewhat high European standard.

Prof. Julian Huxley points out that brain weights of individuals or types are to be compared only in terms of relative brain size. Lapique showed that for different types of mammals or for the sexes the brain varies as the body weight raised to the power 0.56. When men and women are so compared their “coefficient of brains” or relative brain size is identical, though woman's brain is distinctly the smaller. The average size of the natives measured by Dr. Gordon appears to have been much less than that of Europeans, which to some extent would account for smaller brains. Professor Huxley thinks that the abler natives are perfectly capable of profiting by the best education that can be given them. Prof. J. B. S. Haldane satirizes Dr. Gordon's conclusion. He points out that Martin found that the average capacity of the Eskimo brain is 1,563 c.c. and thus exceeds the European. If the Kenya natives are to be protected from European education, Europe should also be protected against the disintegrating effects of Eskimo culture!

# County News

## New York

**Maternal Mortality.**—A joint meeting under the auspices of The New York Academy of Medicine, New York Obstetrical Society, and The Medical Society of the County of New York will be held Wednesday, March 7, 1934, at 8:30 p. m. at The New York Academy of Medicine on the Constructive Aspects of the Academy of Medicine Report on Maternal Mortality.

A resumé of the report will be given by Dr. Harry Aranow. Conclusions and recommendations of the report by Dr. George L. Brodhead. Significance of the report and the measures suggested for carrying out its recommendations by Dr. George W. Kosmak.

Discussion by Dr. A. W. Bingham, East Orange, New Jersey, Dr. Clifford B. Lull, Philadelphia, Dr. Edward C. Podvin, New York City, Dr. S. S. Goldwater, Commissioner of Hospitals, Dr. John L. Ricc, Commissioner of Health, and Dr. Thomas L. Parran, State Commissioner of Health.

## Onondaga

The Comitia Minora of the Onondaga Medical Society has recently directed its Medical Economics Committee to make a survey of the gratuitous work done in Onondaga County by the medical profession during the year 1933, and has further instructed the Committee to ascertain, if possible, the monetary value of these services.

**Discussion on Economics.**—The Society deviated from its usual custom at the February meeting, having voted to dispense with the scientific program and to devote the entire evening to the discussion of matters bearing on the present economic situation as they pertain to medical practice.

Dr. Leo E. Gibson, Chairman of a special committee, proposed the purpose of studying the problems in Onondaga County from a statistical report.

Additional reports were received from the Legislative and Public Relations Committees, which latter body has been making a study of the problems of medical fees as they pertain to compensation and welfare cases.

Dr. Joseph S. Lawrence, Executive Officer of the State Society, who had been invited to address the members, was called upon to explain some of the technicalities arising in connection with the TERA and the CWA as they affect the physician.

At the close of the discussion, Dr. Thomas P. Farmer introduced the following resolution which was adopted by the Society:

"RESOLVED, that it is the sentiment of the Onondaga Medical Society that physicians should be compensated for medical services rendered to indigents;

"AND THAT such compensation be adjusted on the same basis as compensation paid for other services and supplies for indigents;

"AND THAT the Public Relations Committee be instructed to proceed to confer with the appropriate county, city and town officials for the purpose of putting the above mentioned principles in effect.

"AND THAT the Public Relations Committee be given full power to act for the Society in so doing."

That the majority of the members are vitally concerned with the present-day medical problems was evidenced by the large attendance at this session, and by the fact that the discussion lasted until after 11:30 P. M.

**Postgraduate Courses.**—Through the cooperation of the Public Health and Medical Education Committee of the Medical Society of the State of New York, the local Postgraduate Committee has been conducting a course of lectures on Dermatology and Syphilology.

These lectures, which are being held each Thursday evening in the auditorium of St. Joseph Hospital, have been exceptionally well attended, and the speakers up to date have been: Drs. Sulzberger, Niles, Lewis, Stone, and Abramowitz, all of whom are associated with the Department of Dermatology and Syphilology of the New York Postgraduate Medical School, Columbia University.

The remaining three lectures will be given by Drs. Cipollaro, Wisc, and Rosen.

**Officers.**—Dr. Thomas P. Farmer, President of the Society in 1933, was succeeded by Dr. Charles D. Post on January 1, 1934. Dr. Thomas F. Laurie was elected to the Vice-Presidency, and the Secretary and Treasurer were reelected to their respective offices.

## OUR MENTAL TELEGRAPH SYSTEM

Electrical instruments so delicate that they will register a millionth of a volt are being used to explore microscopic areas of the brain, Prof. C. Judson Herrick of the University of Chicago told the American Association for the Advancement of Science, as the Diplomat reports him. Information thus obtained is expected to revolutionize our whole knowledge of the way the human mechanism works.

"I venture the prediction that the electro-biological era now beginning will yield as revolutionary changes in our conceptions of the physiology of the nervous systems as the invention of the microscope inaugurated in an-

atomy," Professor Herrick told his audience.

There are from ten to fourteen billion nerve cells in the cerebral cortex, arranged in definite patterns. It is the little electric currents that flow from cell to cell and from group to group that the new electrical methods are measuring. This new knowledge of intercell telegraphy in the brain promises to yield positive results in understanding differences in behavior between man and his evolutionary cousins, the higher apes, and among the human race themselves, that the older methods which, dependent on study of the grosser brain features, could only block out roughly.

# Medicolegal

By LORENZ J. BROSNAN, ESQ.  
Counsel, Medical Society of the State of New York

## CONSENT TO OPERATION—AN INTERESTING CASE

"Every human being of adult years and sound mind has a right to determine what shall be done with his own body; and a surgeon who performs an operation without his patient's consent, commits an assault, for which he is liable in damages. This is true except in cases of emergency where the patient is unconscious and where it is necessary to operate before consent can be obtained."

These words are taken from an opinion written by the former Chief Judge Cardozo of the Court of Appeals of this State.

When an emergency, in fact, exists so as to permit a surgeon either to operate or to extend the field of the original operation, where the consent of the patient has not been first obtained, is not always an easy question to answer.

A few months ago a high court of one of the Canadian provinces handed down an extremely interesting decision upon the point. A detailed statement of the facts is necessary to a proper understanding of the ruling of the Court.

The plaintiff was a man about fifty years of age whose vocation was that of master mariner. At about the age of twenty, he had fallen and fractured his spine and injured certain nerve trunks. He sustained a permanent loss of sensation on the back of his legs and around the buttocks, and some paralysis of the muscles of his feet. He first consulted the defendant doctor in 1921, and upon being examined told of his injuries previously received. At the time, he had very poor control over his kidneys and bowels and was wearing a rubber urinal. The doctor treated the bladder condition and performed a circumcision upon the man. Later in the same year he was treated for a fistula.

In 1929, the man again consulted the defendant. He was then suffering from fever, headache, dry tongue, sinus infection and general septic poisoning. His urine indicated an infection, and a diagnosis of bladder and kidney stones was made. An operation for the removal of the stones was performed. His bladder condition improved, and he developed a severe pain in the left groin. He was next operated on for an abscess about the kidney. The doctor attributed the pain in the groin to a hernia condition and advised another operation with respect to it. The patient in discussing his symptoms with the doctor, told him that he wanted the hernia cured, and was told that there was a reasonable chance of success in curing it. No other operation was discussed at the time than one for the ordinary treatment of hernia. The operation so discussed was consented to.

The doctor had the man put under a general anesthesia, and made the usual incision. Upon

opening the inguinal canal, the left testicle appeared and was found grossly diseased, being enlarged, nodular and softened. In the surgeon's opinion, in order to bring about a satisfactory cure for the hernia, it was necessary to remove the testicle. He also believed that its removal was indicated because, if left, it would be a menace to the health and life of the patient. Using his best judgment, therefore, under the circumstances, the doctor removed the testicle. Examination of the testicle after the operation revealed multiple abscesses indicating, in the doctor's opinion, that it might have become gangrenous, causing a serious condition of blood poisoning. The man remained in the hospital for some time and eventually his general health improved.

Thereafter the patient brought an action against the doctor making the following charges:

"1. That after being employed to perform and while performing an operation on the plaintiff for the cure of a hernia, and while plaintiff was under the influence of an anesthetic, the defendant without the knowledge or consent of the plaintiff removed the plaintiff's left testicle;

"2. In the alternative, that the defendant was negligent in diagnosing the case and in not informing the plaintiff that it might be necessary in treating the hernia to remove the testicle; and

"3. In the further alternative, that in removing the testicle in the above-mentioned circumstances, the defendant committed an assault upon the plaintiff."

The case came on for trial and there was no serious conflict as to the facts except as to the question of the plaintiff's condition after the operation. The professional skill of the surgeon was not challenged, and there was no question but that the operation was skillfully performed. Several doctors called by the defendant corroborated him in his contentions that what he did was "good surgery," that the condition found could not be anticipated before the operation, and that if the testicle had not been removed, the life and health of the patient would have been endangered. The court concluded from all the evidence that the following propositions were clearly established:

1. That there was no express consent to the removal of the testicle;

2. That no consent thereto could be implied from conversations between the parties



before the operation, and that neither had contemplated the situation which arose;

3. That the removal was necessary for the health of the patient, and that the defendant in good faith upon the operation believed it was reasonably indicated to preserve his life.

The court in deciding the case, reviewed the authorities in England, Canada, and the United States, and came to the conclusion that the plaintiff's action should be dismissed. In its opinion the court summarized certain principles which it felt had been established as follows:

"1. That in the ordinary case where there is opportunity to obtain the consent of the patient, it must be had. A person's body must be held inviolate and immune from invasion by the surgeon's knife if that operation is not consented to. The rule applies not only to an operation but also to the case of mere examination, and it is pointed out in Taylor's Medical Jurisprudence, page 59, that although the fact that a visit paid by a private patient to a practitioner implies consent to a certain amount of examination, it must not be concluded that such a visit entitles the practitioner to compel examination more intimate than the patient desires. Such an examination can only be made with the patient's consent; if made without such consent, it is technically an assault.

"2. That such consent by the patient may be expressed or implied. If an operation is forbidden by the patient, consent is not to be implied and Taylor again says: 'It must be constantly remembered that in this connection silence does not give consent, nor is compliance to be taken as consent.'

"3. That consent may be implied from the conversation preceding an operation or from the antecedent circumstances. It is said that if a soldier goes into battle with a knowledge beforehand that surgeons attached to the army are charged with the care of the wounded, the consent of the patient may be implied therefrom for such operations as the surgeon performs in good faith on a soldier."

The court pointed out that irrespective of a precedent squarely in point, its ruling would be in favor of the physician, and said:

"In the case at bar, I find that the defendant after making the incisions on plaintiff's body, discovered conditions which neither party had anticipated, and which the defendant could not reasonably have foresee, and that in removing the testicle he acted in the interest of his patient, and for the protection of his health and possibly his life. The removal I find was in that sense

necessary, and it would be unreasonable to postpone the removal to a later date. I come to this conclusion despite the absence of expressed or possibly of implied assent on the part of the plaintiff."

One of the cases commented upon in the ruling was an earlier case decided in one of our midwestern States. In that case the facts were held to justify a different decision. There an operation upon the right ear had been consented to. When the patient was under the anesthetic, the left ear was examined and found to be in a more serious condition than the right ear, and it was operated upon.

In that case the plaintiff recovered judgment, the court finding from the proof that the condition of the ear operated upon was not of so serious a nature as to prevent reasonable opportunity of obtaining the consent of the patient before undertaking to operate upon the left ear. In that case the court said, however:

"Reasonable latitude must, however, be allowed the physician in a particular case; and we would not lay down any rule which would unreasonably interfere with the exercise of his discretion, or prevent him from taking such measures as his judgment dictated for the welfare of the patient in a case of emergency. If a person should be injured to the extent of rendering him unconscious, and his injuries were of such a nature as to require prompt surgical attention, a physician called to attend him would be justified in applying such medical or surgical treatment as might reasonably be necessary for the preservation of his life or limb, and consent on the part of the injured person would be implied. And again, if in the course of an operation to which the patient consented, the physician should discover conditions not anticipated before the operation was commenced, and which, if not removed, would endanger the life or health of the patient, he would though no express consent was obtained or given, be justified in extending the operation to remove and overcome them."

In another decision rendered some years ago, another similar dictum was pronounced as follows:

"Where the patient desires or consents that an operation be performed and unexpected conditions develop or are discovered in the course of the operation, it is the duty of the surgeon, in dealing with these conditions, to act on his own discretion, making the highest use of his skill and ability to meet the exigencies which confront him, and in the na-

ture of things he must frequently do this without consultation or conference with anyone; except perhaps other members of his profession who are assisting him. Emergencies arise, and when a surgeon is called it is sometimes found that some action must be taken immediately for the preservation of the life or health of the patient where it is impracticable to obtain the consent of the ailing or injured one or any one authorized to speak for him. In such event the surgeon may lawfully, and it is his duty to perform such operation as good surgery demands, without such consent."

### Erysipelas Alleged to Have Resulted from Doctor's Negligence

A doctor, specializing in gynecology, was consulted by a young colored woman, who made numerous complaints about her condition, including nose bleeds, cold, pains in abdomen, and constipation.

He examined her and found tenderness on pressure at the iliac fossa; her cervix was inflamed, and she had an acute rhinitis with coryza. He prescribed a syrup cough medicine, directed her to take a laxative, and use a douche vaginally. She came back about six weeks later to see the doctor. At that time her cold was better and she made no complaints of nose bleed. The doctor again examined her cervix and found the inflammation had cleared up, and she was not complaining of abdominal pains. Using a speculum and applicator he applied a cautery to her cervix. She returned about a week later and he found her condition of the cervix almost normal and decided to give her a few injections of sodium iodide. She consented to this and he administered an injection of 20 c.c. intravenously. A similar injection was given to her a week later.

When she returned for further treatment about two weeks thereafter, she had developed a condition of erysipelas of the thigh, which the doctor treated with exposure to his Alpine lamp and prescribed ichthyol salve and heat applications. The patient thereafter did not return to the doctor.

She later brought suit against the doctor, charging that in treating her he had been negligent in that he had administered hypodermics in an excessive amount and in injurious doses, which, according to the plaintiff's complaint, were alleged to have caused the condition of erysipelas that developed.

The case was reached for trial in its regular order and plaintiff's attorney made re-

peated attempts to obtain a settlement on behalf of his client, which, of course, the defendant refused to consider. On the eve of trial the plaintiff's attorney realizing the weakness of his claim against the doctor voluntarily agreed to discontinue the action.

### Alleged Negligence in Appendectomy

A doctor, specializing in surgery, was called by a general practitioner to a hospital to perform an appendectomy upon one of his patients. The surgeon agreed and promptly went to said hospital where he found the patient, an eight-year-old girl.

He examined her and diagnosed that she was suffering from acute appendicitis with peritonitis. The history which the surgeon received was that the morning before the patient had developed pain in the epigastrium which radiated to the right lower quadrant and that the patient had vomited several times during the previous twenty-four hours.

He had the patient prepared for operation and promptly performed an appendectomy upon the child. He found a ruptured appendix and closed the abdomen leaving two cigaret drains inserted. The patient's condition improved very well, the surgeon seeing her daily for the next two weeks when her condition was such that she was able to be taken home. At the time she left the hospital the drains had been removed, although there was still a sinus present discharging some pus. He directed that she should be brought to his office from time to time for dressings. He saw her twice thereafter, and each time changed the dressings and the last he heard from the patient was a telephone call informing him that the patient's family physician was taking care of the dressings, as his office was near her home.

It appeared that a few weeks later the doctor attending her discovered that a small abscess about one-half inch below the incised wound had developed. He directed that she should go to the dispensary of the hospital for treatment. A small incision was made and an old suture which had not absorbed was taken out.

An action was thereafter brought against the surgeon charging him with negligence in his treatment of the child in that he had permitted the foreign body to remain in the patient after the operation. After the action had been brought, it was never noticed for trial, and after it had been pending for some years a motion was made on behalf of the defendant to dismiss the case for lack of

prosecution. The day before the said motion was to be argued in court, the attorneys for the plaintiffs voluntarily discontinued the case thereby terminating the matter in favor of the doctor.

### Death Claimed Due to Delayed Operation

A general practitioner was called to the home of a family that he had treated from time to time, for the purpose of attending a girl six and one-half years of age.

The child's complaints were a general feeling of sickness and he found on examination that she was suffering from influenza. The doctor prescribed medications and directed her to go to bed. He saw her daily thereafter for five days and on each occasion he examined her carefully (each examination including an examination of the abdomen). He found no evidence of tenderness of the abdomen or other illness. He next received a hurried call to the child's home and found the girl complaining of abdominal pains. He found her abdomen distended and tender and by examination through the rectum discovered a pelvic mass. He suggested a consultation and brought in a surgeon to examine the child. The surgeon suggested that it would be better to delay the operation until it could be ascertained whether the pelvic mass would subside, expressing the opinion that it would be dangerous to operate at that time by rea-

son that the pus might spread through the abscess into the peritoneum, causing peritonitis. When he called upon the patient the following day she was worse and he recommended that she be immediately sent to the hospital and operated upon. The mother objected to the hospital which he suggested and she was sent the same day to another hospital where neither of the doctors who attended the child had connections. It was later ascertained that the child was operated upon the same night by another doctor who found a gangrenous appendix and condition of peritonitis. The child did not rally from the operation and died the following day.

The mother of the child was appointed Administratrix and instituted action against the first two doctors who had attended the child, claiming that they failed to properly diagnose the patient's condition and that as a result she died by reason of the failure of the said doctors to recommend an operation upon the child timely.

The case came before a jury for trial and at the close of the testimony introduced on behalf of the plaintiff, a motion was made to dismiss the complaint on the ground that the plaintiff had failed to establish by competent testimony that the death of the child was caused by any negligence on the part of either of the doctors. The motion was granted and judgment entered in favor of the doctors.

### A VINDICATION OF THE LEFT-HANDED

The popular view that left-handed people are inferior in some way, mentally or physically, is hit a hard blow by a German investigator, Professor Bethe, physiologist, of Frankfurt. He notices, it seems, that men who lost their right arms in the World War soon learned to use the left equally well. This seemed to him to disprove the idea that one side of the brain is superior to the other. He found, as reported in the *Journal of the A. M. A.*, that left-handedness is more common than is generally supposed. Among 266,000 soldiers, 10,300, or 3.9 per cent were left-handed. The proportion of left-handed and of right-handed young children is identical, ranging around 17 per cent; the remainder are ambidextrous. With increasing age, the proportion shifts toward the side of right-handedness.

Another series of statistics lists 25 per cent of a group of children as left-handed. Bethe instituted experiments on a large scale on students and reached the conclusion that there is

absolutely no predominance of the right side in the use of the limbs. His investigations showed the proportion of genuine right-handed and left-handed subjects to be as 20 to 25 per cent. The view that left-handed persons are supposed to suffer from physical deformities, mental backwardness, epilepsy, criminal tendencies, strabismus, deafmutism, stuttering, and the like, is discredited by the fact that many distinguished men (for example, Leon da Vinci and the surgeon Ludwig Rehn) were left-handed. Bethe addressed a questionnaire to four universities, among the members of the faculty of which 20 per cent were left-handed. This is a far greater percentage than is commonly supposed to exist.

Furthermore, the left-handed persons, as a survey showed, were better in the examinations, on the average, than were the other cases. These observations serve to show that there is no evidence for an unequivocal superiority of one hemisphere of the brain over the other.

# Books Received

[Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from this column will be made for review, as dictated by their merits, or in the interests of our readers.]

**The Practical Medicine Series.** Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Series, 1933. Chicago, The Year Book Publishers [c. 1933]. The 1933 Year Book of the Eye, Ear, Nose and Throat. The Eye, edited by E. V. L. Brown, M.D., and Louis Bothman, M.D. The Ear, Nose and Throat, edited by George E. Shambaugh, M.D., and Elmer W. Hagens, M.D. 12mo. of 632 pages, illustrated. Cloth, \$2.50.

**The Practical Medicine Series.** Comprising Ten Volumes on the Year's Progress in Medicine and Surgery Series, 1933. Chicago, The Year Book Publishers [c. 1933]. The 1933 Year Book of General Surgery, edited by Everts A. Graham, M.D. 12mo. of 826 pages, illustrated. Cloth, \$3.00.

**Red Medicine: Socialized Health in Soviet Russia.** By Sir Arthur Newsholme, M.D., and John A. Kingsbury, LL.D. Octavo of 324 pages, illustrated. Garden City, N. Y., Doubleday, Doran & Company, 1933. Cloth, \$2.50.

**Organic and Bio-Chemistry.** By R. H. A. Plimmer, D.Sc. Fifth Edition. Octavo of 624 pages, illustrated. New York, Longmans, Green & Company, 1933. Cloth, \$7.50.

**Diet and Personality.** Fitting Food to Type and Environment. By L. Jean Bogert, Ph.D. 12mo. of 223 pages. New York, The Macmillan Company, 1934. Cloth, \$2.00.

**Surgical Clinics of North America.** Vol. 13, No. 6, December, 1933. (Pacific Coast Number.) Published every other month by the W. B. Saunders Company, Philadelphia and London. Per Clinic Year (6 issues). Cloth, \$16.00; Paper, \$12.00.

**Recent Advances in Endocrinology.** By A. T. Cameron. Octavo of 365 pages, illustrated. Philadelphia, P. Blakiston's Son & Company, 1934. Cloth, \$3.50.

**Physical Treatment by Movement, Manipulation and Massage.** Being the Third Edition of Massage, Its Principles and Practice. By James B. Menell, M.D. Octavo of 618 pages, illustrated. Philadelphia, P. Blakiston's Son & Company, 1934. Cloth, \$6.00.

**The Modern Treatment of Syphilis.** By Joseph Earle Moore, M.D. Octavo of 535 pages. Springfield, Ill., Charles C. Thomas [c. 1933]. Cloth, \$5.00.

**America Self-Contained.** By Samuel Crowther. Octavo of 340 pages. Garden City, N. Y., Doubleday, Doran & Company, 1933.

**A City Set on a Hill.** The Significance of the Health Demonstration at Syracuse, N. Y. By C. E. A. Winslow, Dr. P. H. Octavo of 367 pages, illustrated. Garden City, N. Y., Doubleday, Doran & Company, 1934. Cloth, \$3.00. (Published for the Milbank Memorial Fund.)

**The Practice of Surgery.** By Russell Howard, M.S., and Alan Perry, M.S. Fourth Edition. Octavo of 1338 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$10.00.

**Text-Book of Pathology.** By Robert Muir, M.D. Third Edition. Octavo of 957 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$10.00.

**Human Sex Anatomy.** By Robert Latou Dickinson, M.D. Quarto of 320 pages, illustrated. Baltimore, Williams & Wilkins Company, 1933. Cloth, \$10.00.

**Paralysis in Children.** By R. G. Gordon, M.D., and M. Forrester Brown, M.D. Octavo of 328 pages, illustrated. New York, Oxford University Press, 1933. Cloth, \$4.50.

**The Teaching of Preventive Medicine in Europe.** By Carl Prausnitz, M.D. Octavo of 180 pages, illustrated. New York, Oxford University Press, 1933. Cloth, \$3.75. (University of London, Heath Clark Lectures, 1932.)

**Red Blood Cell Diameters.** By Cecil Price-Jones, M.B. Octavo of 82 pages. New York, Oxford University Press, 1933. Cloth, \$3.50.

**The Physician's Art.** An Attempt to Expand John Locke's Fragment de Arte Medica. By Alexander G.

Gibson. 12mo. of 237 pages. Oxford, The Clarendon Press, 1933. Cloth, \$3.00.

**Modern Clinical Psychiatry.** By Arthur P. Noyes, M.D. Octavo of 485 pages. Philadelphia, W. B. Saunders Company, 1933. Cloth, \$4.50.

**Treatment of the Commoner Diseases Met With by the General Practitioner.** By Lcwellys F. Barker, M.D. Octavo of 319 pages. Philadelphia, J. B. Lippincott Company [c. 1934]. Cloth, \$3.00.

**Neurology.** By Roy R. Grinker, M.D. Octavo of 979 pages, illustrated. Springfield, Ill., Charles C. Thomas [c. 1934]. Cloth, \$8.50.

**Mental Hygiene in the Community.** By Clara Bassett. Octavo of 394 pages. New York, The Macmillan Company, 1934. Cloth, \$3.50.

**A Short Encyclopaedia for Nurses.** By Evelyn C. Pearce. Octavo of 625 pages, New York, Oxford University Press, 1934. Cloth, \$3.75.

**Handbook of Physiology.** By the late W. D. Halliburton, M.D., and R. J. S. McDowall, M.B. Thirty-third edition. Octavo of 971 pages, illustrated. Philadelphia, P. Blakiston's Son & Company [1934]. Cloth, \$5.50.

**The Great Enigma.** A New View on the Outlook of Life. By Hugo H. Schauiusland, Ph.D. Translated from the German by Walter H. Schauiusland, Ph.D. 12mo. of 90 pages. New York, E. P. Dutton & Company, 1933. Cloth, \$1.25.

**Health Education in an American City.** An Account of a Five-Year Program in Syracuse, N. Y. By Louise F. Bache. Octavo of 116 pages, illustrated. Garden City, N. Y., Doubleday, Doran & Company, 1934. Cloth, \$2.00. (Published for the Milbank Memorial Fund.)

**A Diabetic Manual for the Mutual Use of Doctor and Patient.** By Elliott P. Joslin, M.D. Fifth Edition. Octavo of 224 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$2.00.

**Curing Our Nerves.** By Marshall M. Cloud, M.D. Octavo of 206 pages. Pasadena, Cal., Pasadena News Syndicate Publishers, 1934.

**The Practical Medicine Series.** Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Series, 1933. Chicago, The Year Book Publishers [c. 1933]. The 1933 Year Book of Obstetrics and Gynecology. Obstetrics, edited by Joseph B. DeLee, M.D. Gynecology, edited by J. P. Greenhill, M.D. 12mo. of 630 pages, illustrated. Cloth, \$2.50.

**The Queen Charlotte's Text-Book of Obstetrics.** By Aleck W. Bourne, M.B., and others. Third Edition. Octavo of 679 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$5.25.

**Maternal Mortality and Morbidity.** A Study of Their Problems. By J. M. Munro Kerr, M.D. Octavo of 382 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$8.25.

**Combined Text-Book of Obstetrics and Gynecology.** For Students and Medical Practitioners. By J. M. Munro Kerr, and others. Second Edition. Octavo of 1100 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$10.00.

**A Handbook of Psychiatry.** By John H. Ewen. 12mo. of 267 pages. Baltimore, William Wood & Company, 1934. Cloth, \$4.75.

**The Nature and Treatment of Amentia.** By L. Pierce Clark. Octavo of 306 pages. Baltimore, William Wood & Company, 1933. Cloth, \$4.25.

**Fundamentals of Biochemistry in Relation to Human Physiology.** By T. R. Parsons, Fourth Edition. 12mo. of 435 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$3.00.

# Books Reviewed

**NUTRITION SERVICE IN THE FIELD**—Report of the Subcommittee on Nutrition Lucy H. Gillett, Chairman Child Health Centers A Survey Report of the Subcommittee on Health Centers J. H. Mason Knox, Jr. Chairman Lilian Laser Strauss, Vice Chairman White House Conference on Child Health and Protection Octavo of 139 57 pages. New York, The Century Company Cloth \$2.00

The first division of this book is a report of a subcommittee of the White House Conference which recommends to the Medical Profession an additional lay helper, namely a nutritionist. From the report the following facts are gathered. The Nutritionist is to be one quarter pedagogue so as to be fortified with the groundwork of effective demonstration, one quarter homo economist in order to teach people how to get the most nutritional value for the least money; one-quarter dietitian for the purpose of revealing the secrets of the proper preparation and combination of foods; and finally one-quarter social service worker for the sake of directing the relief of families who are unable to buy sufficient nourishment. Unquestionably the idea is excellent.

There are two sectors to the field, first, the teaching and the supervision of the teaching of nutrition in the schools; and secondly, the application of the art in the Health Center Movement. The committee has in mind only the lay nutritionist and indeed she might well be given the work in the school system. But as regards the Health Center, the supervision should be vested only in a professional helper, that is a physician or a graduate nurse who has specialized in the theory and art of nutrition. The graduate nurse now has the scholastic standing necessary and must take possession of the whole field that is rightly her own but which is being slowly wrested from her by the trained laywomen.

The second division of the book entitled "Health Centers, a Survey" is a statistical summary of the health center movement. The numbers of centers and their distribution are given as well as the numbers and types of assistants and services offered and the numbers, social and racial groups served in the United States and its possessions.

In general the trend of thought of the book is toward Paternalism as might be expected from the composition of each committee. It is to be hoped that the present national movement toward Social Justice will finally convince the country that it is better economic policy to give a fair wage to freemen than to give free gifts to wage slaves and that a resulting self-reliant citizenry will return to the care of the private practitioner by whom his medical needs are best served.

K. G. JENNINGS

**Bone Growth in Health and Disease**. The Biological Principles Underlying the Clinical Radiological and Histological Diagnosis of Perversions of Growth and Disease in the Skeleton By H. A. Harris M.R.C.S. Octavo of 248 pages illustrated. New York Oxford University Press 1933. (Oxford Medical Publications)

The material in this book represents Professor Harris' results of his investigations during the past ten years.

Part I deals with the causes and effects of arrest of bone growth. During any acute disease, there is an arrest of development, such arrests of growth are frequently demonstrated by x-rays taken for other purposes.

Part II deals with bone growth in deficiency diseases, such as rickets and scurvy. There is a splendid description of the sequence of changes occurring at the epiphyseal line. Individual vitamins are specific in certain processes of bone growth, but because there are so many limitations to their bone-forming properties, he sees no further danger of having any vitamin or group of vitamins being accepted as a single panacea for the restoration of disturbances of bone growth.

Part III discusses primary perversions of bone growth as seen in monostrotics, achondroplasia, the effects of syphilis and tuberculosis on bone growth. A chapter on Paget's Disease is timely.

The illustrations are excellent. The text is clear and concise. All those who do bone surgery should read this volume. There are many important facts between its covers.

DONALD C. McKENNA

*Die Psychoanalyse und der Praktische Arzt*. Vortrag gehalten zu Ehren von Prof. Sigm. Freuds 75. Geburtstag in der Deutschen Medizinischen Gesellschaft der Stadt New York am 4. Mai 1931 von Dorian Feigenbaum 17mo of 227 pages. (Sonderdruck aus Zentralblatt für Psychotherapie und ihre Grenzgebiete Band VI Heft 1) Leipzig S. Hirzel [1933]

At the celebration of Freud's 75th birthday, held in May, 1931, Dr. Feigenbaum read this paper before the German Medical Society in New York City. The paper was published in a German medical journal, and is now available in book form. There is very little that may be said, except that one may refer to Dr. Feigenbaum's English publications and get more from them, than from the rather difficult presentation in German.

There are now excellent English presentations of the subject matter, no longer does one need to read German publications to get an idea of psychoanalysis.

IRVING J. SANDS

**Obstetrics and Gynecology**. Vol. 3. Edited by Arthur H. Curtis M.D. Octavo of 1701 pages illustrated and General Index, Volumes 1, 2 and 3. Octavo of 137 pages Philadelphia W. B. Saunders Company, 1933. Cloth Complete set, including index \$35.00

The authors of the various chapters in volume 3 are well known. The book is a masterpiece of the pelvic vic organs, disturbances of function, and considerable space is devoted to the endocrines in

gynecology and obstetrics. Special diseases and important symptom complexes are discussed in detail, and the latter half of the book is devoted to special problems in relation to gynecology, such as the colon and the appendix, the urinary tract, roentgenography, radiotherapy, blood transfusion, etc.

These volumes must be read to be appreciated. The reviewer knows of no other work which is so comprehensive, and so well edited as this.

*Obstetrics and Gynecology* should be read by all those who are interested in the practice of this specialty.

The general index for all three volumes is in a separate book of 137 pages.

WM. SIDNEY SMITH.

*Pathogenic Micro-organisms. A Practical Manual for Students, Physicians and Health Officers.* By William Hallock Park, M.D., and Anna Wessels Williams, M.D. Tenth Edition. Octavo of 867 pp., illustrated. Philadelphia, Lea & Febiger [c. 1933]. Cloth, \$7.00.

This classical work, arranged in three parts, is a practical manual for students, physicians, and health officers. Part I deals with the general characteristics and methods of study of micro-organisms. Part II discusses the study of the individual disease producing micro-organisms. Part III presents certain practical aspects of the subject, such as the bacteriological examination of water, air, and soil, and sewage disposal, bacteriology of milk, shellfish, and practical sterilization. This new edition includes many changes. The practical application of immunization against diphtheria and scarlet fever is given, as well as other problems of immunity. It also includes the recent additions to our knowledge of yellow fever, poliomyelitis, bacteriophage, undulant fever, and others. There are many other revisions and additions which bring this treatise on micro-organisms to date.

EDWARD H. NIDISH.

*Bacteriology for Medical Students and Practitioners.* By A. D. Gardner. 16mo. of 276 pages. New York, Oxford University Press, 1933. Cloth, \$2.25.

In his preface, the author states that the chief aim of his book is to present shortly, readably, and relevantly, as much of bacteriology as a medical student or practitioner needs to know, but in this the reviewer does not believe that he has entirely succeeded. While he has made his subject very readable, indeed, its very conciseness militates against any real usefulness, so that it is at best, only a very good outline of bacteriology.

ISADOR COHN.

*If I Have Children.* By G. Francis Smith, M.R.C.S. 12mo. of 133 pages. New York, Oxford University Press, 1933. Cloth, \$1.75.

Dr. Smith has given a short, and yet a sufficiently detailed summary of hygiene as applied to the problem of the expectant and inexperienced or troubled mother. His advice is sound in all respects and his explanations of the beginnings of behavior problems and their treatment will soothe the worries of many a mother. While religion is the most important feature of the lives of all of us, whether we admit it or not, in a book like this

it would have been better to have dismissed it as such rather than to have given personal views on the subject. With this single objection the book is an excellent handbook for mother, guardian, teacher, nurse, and nurse-maid.

KENNETH G. JENNINGS.

*The Practical Medicine Series. Comprising Eight Volumes on the Year's Progress in Medicine and Surgery. Series 1933.* Chicago, The Year Book Publishers [c. 1933]. The 1933 Year Book of General Medicine, edited by George F. Dick, M.D., and others. 12mo. of 831 pages, illustrated. Cloth, \$3.00.

The scope of this book is the same as in past years consisting of quite full abstracts from the principal articles of the leading American and foreign journals. The department editors are Dick, Lawrason, Brown, Minot, Castle, Stroud, and Eusterman. In the section on Infectious Diseases, scarlet fever toxin and antitoxin are considered to be more valuable than formerly, and work on the etiology of arthritis emphasizes the frequency of the hemolytic group of streptococci rather than the *viridans*. All branches in the field of internal medicine are thoroughly covered.

The book furnishes an economical and easy way of keeping up with the progress made and is well worth a yearly subscription.

W. E. MCCOLLOM.

*A Study of Rural Public Health Service. For the Committee on Administrative Practice of the American Public Health Association by the Sub-Committee on Rural Health Work.* Edited by Allen W. Freeman, M.D. Octavo of 236 pages. New York, The Commonwealth Fund, 1933. Cloth, \$2.50.

This book gives a very good cross section of rural public health work in the United States. It is a good reference work for health workers. It shows the need for the keeping of accurate records and also the woeful lack of coordination in the administration of health activities in the United States. The contrast between the work in the organized and unorganized area is quite marked, the advantage being greatly in favor of organization.

Dr. Freeman is to be commended for the painstaking care in the compilation of a great mass of statistics and for the impartiality with which he has made his comparisons.

A. D. JACQUES.

*The Practice of Podiatry.*—By Reuben H. Gross, M.C.P. and E. K. Burnett. Edited by Maurice J. Levi, M.D. Octavo of 451 pages, illustrated. New York, Harriman Printing Company, 1933.

Although this book is intended primarily for the podiatrist, it contains information which will render it of great value to the medical practitioner as well, and particularly to the orthopedic surgeon. The description of footwear is most interesting and instructive. A great variety of subjects is covered, but throughout the text the authors clearly designate where the province of the podiatrist ends and that of the physician begins. The information compiled in this book is presented in a most concise manner, with diagnosis and treatment of the various conditions clearly considered. The book is complete in its detail, well printed and illustrated, and can be fully recommended.

JEROME WEISS.

## THE RELATION OF BILIARY DYSFUNCTION TO LITHIASIS

LESTER R. WHITTAKER, M.D., F.A.C.S.

*From the Evans Memorial for Clinical Research and Preventive Medicine, Boston University School of Medicine, and the Surgical Clinic of the Massachusetts Memorial Hospitals*

Since stones are formed chiefly from constituents of the bile, an inquiry into conditions favoring precipitation or crystallization in this medium is essential to a study of the mechanism of cholelithiasis.

*Cholesterol* is the most important substance concerned with gallstone formation; it is probably involved at the very beginning of the vast majority of gallstones. Cholesterol is insoluble in water; yet the bile is an aqueous medium containing cholesterol and other substances. This must be affected by special chemical relations in the bile. All agree that cholesterol is held in colloidal dispersion by the action of bile salts. Cholesterol is even more freely dispersed in the lipids of the bile which have been emulsified by alkali cholates—the bile salts.<sup>1</sup> There is probably a fairly definite ratio of bile salts to cholesterol and lipids, which is essential to prevent crystallization. Anything which disturbs this ratio provides the first step in stone formation. This may arise:

1. Through changes in the blood from which bile is manufactured.
2. From dysfunction in the liver itself whereby it secretes an altered bile.
3. From abnormal anatomical or functional states in the extrahepatic biliary passages.

Let us examine some of these factors:

**HYPERCHOLESTEROLEMIA** is the most significant aberration of the blood in cholelithiasis, a relation between the two conditions having been observed often in patients.<sup>2</sup> The blood cholesterol is elevated in pregnancy.<sup>3,4</sup> With many a woman the onset of symptoms follows the birth of the first child. Diabetics, in

whom the incidence of gallstones is increased, also show hypercholesterolemia.<sup>5</sup> In experimental animals overfeeding with lipids,<sup>6</sup> or intraperitoneal injections of cholesterol emulsion,<sup>7</sup> can produce an increase of cholesterol in the blood, and masses similar to gallstones in the bile. It is interesting to note that high feeding of butter-oil to lactating goats produces marked increase of combined cholesterol and of total lipids in the blood plasma.<sup>8</sup> This gives us a hint for prophylaxis in pregnant and lactating women.\*

**DISTURBANCE OF THE LIVER** leading to secretion of abnormal bile may presumably arise from four sources:

1. Infections: hematogenous, from a systemic or portal focus; ascending, through the bile ducts; or by lymphatic extension from associated viscera, especially the gallbladder.
2. Toxic damage: poisons, like chloroform, carbon tetrachloride, phosphorus, alcohol; or autogenous toxins like those of eclampsia or intestinal obstruction.
3. Obstruction: common duct blocked by stone, tumor, or stricture.
4. Metabolic states: so-called, concerned with the liver or endocrine organs, predisposing to stone formation.

*Infection of the liver* through the portal system has its most striking example in pylephlebitis and liver abscess arising from a suppurating appendix. If major acute infections can derive from this source, certainly minor chronic ones

\* A high fat diet in lactating goats does not increase either the milk flow, or the content of fat. When alfalfa hay is added, however, there is an increase in the milk. For lactating and pregnant women a rich diet will probably only give a hypercholesterolemia and lead to gallstone formation. Lean meat and salads furnish the same elements as alfalfa hay.

may, as well as from other gastro-intestinal lesions. Proving a connection, however, between infection of the liver and a focus elsewhere through the systemic blood stream is not easy; yet the liver, through its reticulo-endothelial system, is one of the major filters of the body. It is probable that the liver is subject to more or less constant bacterial insult of varying degrees, and it is conceivable that under some of these conditions the liver puts out a bile which is somewhat altered with regard to composi-

with chloroform will markedly reduce bile-salt production. Considerable destruction of the liver has been observed, too, in such conditions as severe puerperal eclampsia and intestinal obstruction.<sup>10</sup> Again Smyth and Whipple have shown that injection of proteose from a closed intestinal loop decreases bile salts. All these conditions, then, would favor precipitation of cholesterol. It is conceivable that industrial poisoning, or mild, long-continued intoxication from food, or food preservatives, or substances elaborated in



Fig. 1.—Cholecystogram of Gallbladder, With Stones. The shadow is clearly outlined and fairly dense, indicating that the mucous membrane has concentrated the radiopaque material. The two rounded areas at the fundus represent negative shadows due to stones of less density than the surrounding medium—cholesterol.



Fig. 2.—Cholecystogram of Gallbladder in Contraction. Same as in Fig. 1, two hours after the patient had taken a meal rich in fats. Note tremendous reduction in size of the shadow. This has been brought about by active contraction of the musculature of the wall. The negative shadows due to the stones are still present. These two figures indicate that a gallbladder may contain stones and yet may function normally with regard to concentration by the mucosa and contraction by the musculature.

tion and chemical relationships; perhaps not enough in itself to cause precipitation, but augmenting a second agent having a tendency to this effect.

Extension of infection to the liver from the gallbladder or another viscus by contiguity, or through the lymphatics, is generally a localized process; it is difficult to see how the character of the bile would be significantly altered thereby. On the other hand, ascending cholangitis with jaundice, especially if repeated, produces a generalized liver damage more likely to affect the bile.

*Poisons*, such as chloroform, damage the liver severely; also carbon tetrachloride, phosphorus, alcohol, and other chemicals. Chloroform anesthesia of a dog for one hour will produce a central fat necrosis involving one-third of the liver lobule. Smyth and Whipple<sup>9</sup> have shown that extremely slight poisoning

the digestive tract, or from general toxemia, might disturb the liver enough to alter the character of the bile in such a manner as to favor cholelithiasis.

*Obstruction of the common bile duct* as a factor in cholelithiasis would have to be incomplete, or intermittent over a considerable period. This could hardly be brought about except by pre-formed stones. In complete obstruction there is eventually an absorption of most of the bile constituents, and, secretion of the liver being stopped, the ducts are filled with mucus and cellular debris. Unless the obstruction is relieved, the individual will die before stones can develop. I have seen, however, in a case of carcinoma of the pancreas, a tremendously distended bile duct and gallbladder containing a material which appeared as if



the pigmented and other solid matter of the bile had precipitated in dark green flocculi, suspended by a clear, thin, mucus-like fluid. The liver showed reddish brown mottling indicating considerable damage.

Finding such a precipitate in simple obstruction with injury to the liver, and no apparent disease of the extrahepatic biliary system, suggests the following hypothesis:

Given *intermittent stasis* due to a pre-formed, ball-valve stone in the common duct, with perhaps incomplete drainage in the intervals, a situation would arise allowing solid matter to collect in the ducts. The liver periodically damaged from obstruction, and more or less continually upset by the processes of resolution and repair, might put out an unstable bile favoring precipitation during the periods of stasis. Some workers<sup>11</sup> have found that bile salts in fistula bile are absent or diminished for days or weeks after operative relief of obstruction. This, as previously stated, would dispose to precipitation of cholesterol. Often we see at operation in cases of obstruction by stone a bile loaded to almost putty-like consistency with cholesterol and pigment-containing debris. Infection, also, which usually supervenes in these cases, might be a contributing factor to chemical instability in the bile. Some of these conditions will be discussed later under effects of the gallbladder on the bile in lithiasis.

Here is a promising field for investigation. I hope to be able to continue suggestive experiments started a few years ago, placing human gallstones in the biliary passages of animals, and studying the factors induced by obstruction. I am sure that much could be learned about cholelithiasis in this way, especially if a correlated study be made in patients with gallstones.

*Abnormal metabolic states* involving the endocrine organs with the liver is also an inviting field for investigation in the etiology of cholelithiasis. Statistics show beyond question that gallstones are more likely to occur in fat persons, and probably in proportion to the degree of obesity.<sup>4</sup> The rapidly fattening woman with presumable ovarian or pituitary dysfunction, who simply cannot let sweets and rich foods alone, is a good subject for

gallstones. Certain types of individuals, especially those of sthenic habitus, are likely to have gallstones in middle age. Cholelithiasis appears to run in families, a very large proportion of those with the physical characteristics of certain strains *developing the disease*. It is probably concerned with abnormal fat or cholesterol metabolism in the body and may be related to arteriosclerosis and allied conditions.<sup>12</sup> There is no doubt that in the vast and complicated laboratory of the body processes are going on, of which we know little or nothing, that have a definite relation to the development of stones in the bile.

THE EXTRAHEPATIC BILE PASSAGES, consisting of the ducts and the gallbladder, affect the character of the bile in numerous ways. We assume that their action may be primary, whereby stones are produced in a normal bile, or secondary, by providing means for further alteration of an abnormal bile from the liver.

*The ducts*, it appears, can modify the bile by addition, by absorption, and by providing a lake for stasis of bile. There are numerous gland-like structures in the wall of the ducts which probably add something to the bile. The purpose of these structures may be simply to furnish a lubricant as the bile passes down from the liver. This function could assume great importance in the passage of a stone. Perhaps Nature saw that her work was imperfect as far as the tendency to precipitation in the bile was concerned and devised this mechanism to assist in elimination of the precipitate.

It has been postulated that these gland-like structures have an absorptive function similar to the gallbladder, and that after cholecystectomy they take over this function.<sup>13</sup> They are large and numerous in the horse, which has no gallbladder. As stated previously, in prolonged complete obstruction of the common duct the coloring matter of the bile disappears. This may be brought about through precipitation and disintegration of the precipitate, or the pigment, and perhaps other substances may be absorbed by the epithelium of the ducts, including these gland-like structures. The addition of material to the bile, or the withdrawal of material from it, is potentially disturbing to its chemical equilibrium.

The effect of stasis in the ducts is mentioned in the section on the liver. It is illustrated by cases where after cholecystectomy the patient is operated upon time and again for the removal of putty-like débris obstructing the outlet of the common duct. In addition to the factors mentioned in the foregoing tending to precipitation, stasis is added. It is important to note that cutting or dilating the sphincter of the common bile duct at operation would probably prevent the formation and collection of débris. I have observed in numerous experiments on animals that the sphincter does not



Fig. 3—Cholesterosis of Gallbladder With Stones. Represented by Figs. 1 and 2. The serosa is smooth, the wall thin, the mucosa normal except for cholesterosis. The arrow shows a small polyp of the same nature as those in Fig. 10. The lobulated stones were probably made by the matting and rolling together of desquamated polyp as the gallbladder contracted after meals. There could not have been any marked degree of inflammation in the wall of this gallbladder to allow such a degree of contraction as seen in Fig. 2. (From Practitioner's Library, Vol. IV, D. Appleton—Century Co)

regenerate once it is sectioned. We have been fearful that removal of the sphincter would lead to ascending infection of the ducts and liver. The contents of the duodenum, however, are usually sterile. In only the occasional case in animals was there a suggestion of infection, though some were kept for months.

THE GALLBLADDER is an organ, the possibilities of which for bringing about changes in the bile are greater than those of the ducts. It has a structure signifying increased activity, including a larger mucous surface for either addition or absorption of material, and a muscular coat which has the power of expulsion of the vesicular contents.<sup>14, 15, 16, 17, 18</sup> The mucous membrane is known to produce marked concentration normally in the bile.<sup>19, 20</sup> This may of itself favor crystallization or precipitation. Aberration in the absorptive or additive power of the membrane may also bring to bear a potent influence in this direction. The complete or partial failure of expulsive action in the muscular coat leads to corresponding degrees of stasis of bile in the vesicle. A combination of these factors multiplies the possibilities for evil. We are not sure that gallstones would be produced from a normal bile under the influence of this altered function in the gallbladder, but it seems a possibility.<sup>21</sup> It does appear certain, however, that given an abnormal bile from the liver to start with, such disturbances in the activity of the gallbladder will lead to the formation of gallstones.

Let us examine some of these factors:

The *mucous membrane* and conditions associated with it in cholelithiasis will engage us first.

*Secretion of the Gallbladder.*—It is generally agreed that the mucoid material found in the gallbladder under certain conditions, for instance blockage of the cystic duct, represents a product of its own lining membrane. There are glands in the cystic duct; and it is believed by some that the epithelial cells of the mucosa undergo a process somewhat similar to that of the goblet cells in the intestinal tract. Certainly at times granular and other changes can be seen which indicate secretion.<sup>22</sup> When for any reason bile is prevented from entering the gallbladder it becomes filled with mucoid substance.

*Does the Gallbladder Secretion Contain Cholesterol?*—For years there has been a controversy over this point. Naunyn<sup>22</sup> advanced the idea that cholesterol in the contents of the gallbladder may be derived from the epithelial cells thrown off in normal desquamation, a process which is increased by irritation

from the bile. This increase of the cholesterol content of the gallbladder bile Naunyn believed to be significant in gallstone formation. There is considerable reason in Naunyn's view. We know that all epithelial surfaces exhibit active desquamation. It is a common observation to find a gallbladder where the cystic duct has been obstructed by stone, filled with a mucoid material glimmering with myriads of cholesterol crystals. In many of these cases the mucosa has been destroyed. Possibly the cholesterol crystals were derived from degeneration of the mucosa. Rotating degeneration and regeneration of the mucosa of the gallbladder may lead to a constant increase of cholesterol in the vesicular content. It is, of course, difficult to rule out the effect of increased cholesterol due to inflammatory exudate in such cases. The question arises—does degeneration of the epithelial cells of the mucosa result in cholesterosis? This will be discussed later.

Elman and Graham<sup>22</sup> also hold to the view that the gallbladder secretes cholesterol. Experimentally, they have tied the cystic duct and found at the end of 2 to 16 days that the content of cholesterol in the gallbladder bile was increased. The objection to their experiment is that they must have produced some inflammatory reaction by their blockage of the cystic duct; and we know that inflammatory exudates are rich in cholesterol.

On the other hand, the majority of students do not believe that the mucosa of the gallbladder secretes cholesterol. Aschoff<sup>23</sup> holds that cholesterol is a normal secretion of the liver cells into the bile. Dostal, Hrdina, and Goff,<sup>24</sup> and Phe-mister<sup>25</sup> found that in cystic duct obstruction the secretion of the gallbladder did not contain an increase of cholesterol.

Several years ago while experimenting with different methods of inducing stasis in the gallbladder, I cut the common-duct sphincter in a number of cats.<sup>16, 17, 28</sup> In many of them, upon examination after a few days, the gallbladder contained only mucoid material. It occurred to me that, since in these cases the gallbladder did not refill with bile, this would be an excellent atraumatic method for studying the secretion of the gallbladder itself. Dr. Burnham Walker<sup>26</sup> and I performed the experiment upon 22 cats. In 18 the results were indeterminate, or the gall-

bladder contained cholesterol, probably from the presence of a small amount of bile, attested by greenish color. In 4, however, the vesicle contained only clear mucus which showed no trace of cholesterol. This led us to believe that the gallbladder does not normally secrete cholesterol.

Boyd<sup>3</sup> and Mentzer<sup>27</sup> hold that cholesterol is absorbed rather than excreted by the mucosa. I also hold to this view. The evidence in favor of absorption is that solid and lipid materials when placed in the gallbladder can be demonstrated to



Fig. 4.—Cross Section of Gallbladder Wall. Same as in Fig. 3 Low power. Note the large sections of smooth muscle tissue interspersed with fibro-elastic tissue. This muscle was the agent which produced the marked contraction shown in Fig. 2. The fibro-elastic tissue prevents overdistention and rupture of the gallbladder in case of obstruction. Above is the much folded mucous membrane, with large surface for absorption. Concentration of the radio-paque material in Fig. 1 sufficient to produce the dense shadow was made possible by this mucous membrane. The bulbous projection from the mucosa is one of the small "strawberry seeds" in Fig. 3.

have been taken in by the mucosa.<sup>3, 27, 28</sup> Although actual absorption of cholesterol placed in the gallbladder has never been demonstrated, since lipids are absorbed (Fig. 6), and since Weiser<sup>1</sup> has shown that cholesterol is very soluble in the lipids of the bile, it seems almost certain that this occurs. Wilkie and Donbilet<sup>29</sup>

have obtained evidence that the content of cholesterol in gallbladder bile depends upon the blood bile-cholesterol ratio. When the ratio in the blood is increased, cholesterol goes into the gallbladder, and vice versa. There may be another cause for this, but, since cholesterol of blood and bile is in the colloidal state, it would hardly seem that the mucosa of the gallbladder could act as a simple osmotic membrane in this case.

The question of variation of calcium content of the bile is, of course, important in cholelithiasis. The majority of workers believe that in inflammation and cystic duct obstruction calcium is increased in the gallbladder,<sup>22, 25</sup> though some deny this.<sup>30</sup>

Schubb and Goodstone<sup>31</sup> report a case with cystic duct obstruction in which the gallbladder contained "milk of calcium" bile. They also review the literature of such cases, and of calcium stone, including those of Phemister. Whether it is by infection, altered secretion, or as Rous, McMaster, and Drury<sup>32</sup> hold, alkalization of the bile from these or other causes, aberrations of calcium metabolism in the bile play a significant part in lithiasis.

*Selective absorption by the mucosa of the gallbladder* alters the content of the bile. Water and soluble salts are taken up as well as more or less solid matter.<sup>33</sup> The mucosa of the gallbladder is generally stained with the coloring matter of the bile, indicating absorption. Lipids are taken up in considerable quantity apparently normally, producing no reactions in the mucosa.<sup>27, 28</sup> Andrews<sup>34</sup> has obtained evidence that in the closed gallbladder bile salts are absorbed much more rapidly than cholesterol, which would tend to throw the latter out of solution. Furthermore, by absorption of water, the bile in the gallbladder is concentrated from 10 to 20 times or more.<sup>19, 20</sup> Concentration is limited by the fact that the gallbladder continually secretes mucus and empties more or less completely after a meal; there is also considerable overflow of bile upon distention of the vesicle during fasting. However, any considerable increase in concentration of the vesicular content probably favors crystallization and precipitation, leading to formation of gallstones.<sup>21</sup>

*Under abnormal conditions the addition to, and absorption from, the vesicular content may be modified.* Inflammatory exudate increases the content of cholesterol<sup>21</sup> and probably calcium.<sup>12</sup> Irritative action upon the mucosa, if mild, may result in an increased expulsion of mucus. If an intense infection supervenes the exudate will be purulent. In blockage of the cystic duct the secretion of mucus continues, augmented by irritation. There is an absorption of pigment from the bile, and later disintegration of the mucosa. Should the blockage of the cystic duct continue, interfering with the circulation of the vesicle, the



Fig. 5.—Histology of Cholesterosis. High power. Showing the bulbous projection from the mucosa, of Fig. 4. The white areas indicate histocytes laden with cholesterol. Continued deposit of this substance produces degeneration of the epithelium by pressure (top); also encroachment upon the blood vessels, with degeneration of the mass<sup>36</sup>; and thus perhaps an augmentation of cholesterol production. Continuation of this process results in the condition shown in Fig. 10.

process goes on to acute inflammation and gangrene.<sup>35</sup> But if it is partially or temporarily relieved, a considerable part of this abnormal content, rich in protein, cholesterol, and calcium, may be left in the gallbladder, with admixture of bile furnishing material for the formation of stones.

*Cholesterosis (strawberry gallbladder)* is a condition in which the mucosa contains an excessive amount of cholesterol; we do not know whether it is in process of secretion, or absorption, or degeneration. Cholesterol or cholesterol

ester is held chiefly just underneath the epithelial cells, in histocytes, which are connective-tissue phagocytes associated with the reticulo-endothelial system. These may collect into such large masses that they produce small polyps on the mucosa, which give the appearance of strawberry seeds (see Figs. 3, 4, 5, 6, and 10). As we have mentioned, some hold that this cholesterol is a product of degeneration of the mucosa itself,<sup>22</sup> or of secretion by the mucosa,<sup>23</sup> and others that it is absorbed from the bile containing an abnormally large amount of it.<sup>3 27</sup> Normal absorption might produce the ordinary strawberry gallbladder, but it

an over-laden blood, but it does not rule out the theory that it can be caused also by absorption from the bile.

Whatever its cause, *cholesterosis probably has a direct bearing on the formation of certain types of gallstones*. The theory of Boyd<sup>4</sup> is that these polypoid masses break off the mucosa in the course of natural desquamation and become rolled and matted into masses which eventually become stones, chiefly of the mulberry or lobulated type. This seems reasonable to me. Examine Figs. 9 and 10. Compare the structure of the polyps and the lobulated masses on the surface of the gallstones in these figures. The spherical shape of this type of stone is evidence that they are produced by agglomeration and rolling of the mass of foreign material into balls by the motion of the gallbladder and pressure of its wall as it contracts (see Figs. 1 and 2).

The collection of cholesterol in the histocytes, or fixed connective-tissue phagocytes, is well illustrated in Fig. 5, the light spaces within the stroma representing histocytes containing cholesterol or cholesterol ester. Figure 6 shows a fat stain giving us an indication of the amount of this material which collects in the mucosa of the gallbladder.

When these masses of mucosa containing cholesterol break off there is, of course, considerable organic matter from the mucosa involved in the material which goes to make up the type of stone under consideration. Figure 14 shows a pure cholesterol stone which at one end contains a mass of the nature shown in Fig. 9. It appears to have been pressed over the end of the stone to which it adhered, and was then polished off by friction of the walls in contraction. To me this is evidence that these lobulated or mulberry stones are produced by agglomeration of smaller masses, the material being derived from the mucosa in cholesterosis.

*What Is the Relation of Inflammation to Cholesterosis?*—It has been held that the process is a direct result of inflammation due to infection.<sup>8, 23</sup> Evidences of inflammation in the wall of the strawberry gallbladder can be found, but often so slight as to be of doubtful significance.<sup>4, 55</sup> (Figs. 7 and 8). The gallbladder in this condition usually functions extremely well, both from the point



Fig. 5  
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ing light areas in Fig. 5 are stained black here.  
(From W. Boyd, Brit. Jour. Surg.)

A fat  
sterol in  
"respond-

seems hardly possible that it could account for polyposis where there are large masses of the material (Fig. 10). This is more likely a pathological change associated with abnormal metabolism.

Sacks has found that a finely suspended emulsion of cholesterol injected intravenously is deposited in the reticulo-endothelial system; and "Chalato was able, by especially abundant and protracted stuffing with cholesterol dissolved in sunflower oil to produce lipoid infiltration of the epithelium of the gallbladder."<sup>12</sup> This is evidence that the reticulo-endothelial system is a normal defensive mechanism against cholesterol in certain forms. It suggests that strawberry gallbladder may be produced simply by extraction of cholesterol from

of view of absorption by the mucosa, and contraction of the muscular coat (see Figs. 1 and 2). It is probable that this inflammatory reaction comes as the result of the cholesterosis and not as a cause of it. Picking up of the cholesterol by the histocytes is evidence that it is an irritative material being disposed of by the tissues. Lymphocytic infiltration, the usual result of inflammation in these cases, is another sign of a mild irritative agent. It would appear that if infection with the resultant inflammation were a primary process there would be more disturbance of the normal functioning both in the mucosa and in the muscularis.

A study of the reaction to foreign material in the wall of the normal and inflamed gallbladder has been made by H. H. Cooke.<sup>36</sup> Cooke regards the histocytes, which are interspersed among the connective-tissue cells of the wall of the gallbladder, as a definite protective mechanism against bacteria and other foreign matter:

"The injection of particulate matter [very finely divided suspension of carbon particles] or of vital dyes directly into the wall of the gallbladder of the dog produces a rapid mobilization of the resting wandering cells into large actively mobile phagocytic histocytes. . . . In chemical cholecystitis [produced by intravenous injection of Dakin's solution] the histocytes are present in large numbers. They rapidly phagocytose particulate matter, cholesterol, and olive oil injected into the wall. The arrangement of the histocytes in three concentric layers [corresponding to the connective-tissue layers] suggest their function as a phagocytic, cellular, defensive mechanism in cholecystitis and other pathological conditions of the gallbladder."

In view of all these facts it would seem that the following is the most plausible explanation of cholesterosis in relation to gallstone formation. Through overeating of fats, the rapid oxidation and mobilization of fat in the body, or some toxic, metabolic, or endocrine disturbance, hypercholesterolemia is produced. There is a tendency of the reticulo-endothelial system, including that of the gallbladder, to take up the excess cholesterol. Also the liver secretes a bile containing an abnormally high percentage of cholesterol with insufficient bile salt to hold it in solution. This bile collects in the gallbladder, which through some fault of its emptying mechanism is subject to stasis. The actively absorptive mucosa takes up the precipitated particles of

cholesterol. These being irritative are phagocytosed by the histocytes (Figs. 5 and 6), collecting in large masses, forming the typical strawberry-seed polyp on the mucosa (Figs. 3 and 10). The polyps enlarge through the addition of more cholesterol-laden histocytes, possibly from degeneration of the normal cells of the mucosa, possibly by deposition of cholesterol from the blood. They finally break off; and through the motion of the gallbladder during its contractions are rolled into rounded masses, producing gallstones of the mulberry or lobulated type (see Figs. 1, 2 and 9). The evidences of inflammation in the gallbladder beyond the collection of lipid-laden histocytes;



Fig. 7.—Musculature of Gallbladder Wall. High magnification. Same gallbladder as represented by Figs. 1, 2, 3, 4, and 5. Practically the whole field is filled with smooth muscle tissue, giving an idea of the large amount in the wall of the gallbladder; which makes possible such a contraction as shown in Figs. 1 and 2. There is no abnormal infiltration of inflammatory cells—no damage.

that is, the collection of lymphocytes, plasma cells, etc., are due to the reaction on the part of the gallbladder to a mild irritant in its wall. Infection may play no part in the process whatever until, through irritation of the mucosa by the stones ulceration is produced, or by their impaction in the cystic duct, the circulation of the vesicle is disturbed.

For future reference it may be well to bring to mind here the *action of the*

muscular coat of the gallbladder and its abnormalities in relation to cholelithiasis. The purpose of the muscularis is expulsion of the vesicular content.<sup>14, 15, 16, 17, 18</sup> Note the amount of smooth muscle in Figs. 4 and 7. The fibro-elastic tissue of the gallbladder is to prevent overdistention or rupture. Normally the human gallbladder expels anywhere from one-half to nine-tenths of its contents after an ordinary meal. In fasting or in conditions under which the food is not absorbed, such as



Fig. 8.—Infiltration of Inflammatory Cells. One of the rare high-power fields showing lymphocytes, polynuclear leukocytes, and plasma cells. This indicates a mild process which in all probability has not been concerned in the formation of the gallstones or the cholesterosis shown in Fig. 3. Possibly it is an indication of an irritative reaction due to the presence of cholesterol in the wall of the gallbladder.

nausea, or in low physical states, such as typhoid fever, or in any condition in which the normal stimulus fails to reach the muscle of the gallbladder, it will not contract, and the gallbladder will not empty. If the muscularis is damaged by infection or inflammation (Fig. 11), or if the cystic or common duct is obstructed, the gallbladder will not empty. A stone occasionally blocking the cystic duct may produce a considerable degree of stasis in the vesicle (Fig. 12). Any condition in which the bile remains an abnormally long time in the gallbladder, allowing increased concentration, and perhaps addition of abnormal materials, predisposes to gallstone formation.

The relation of infection to gallstone formation in general is of sufficient importance to merit separate discussion. Gallstones form in the bile and from the bile. The only way infection or any other agent can produce them is by altering conditions in such a manner that solid matter is produced in the bile. To affect the mucosa, which is in contact with the material from which stones are formed infection would have to be severe. For it is a common observation that in all those cases except where inflammation is pronounced, infection in the bile is rare, while in the wall of the gallbladder it is more common. About the only way this infection in the wall of the gallbladder could produce gallstones in the bile would be by damaging the musculature and mucosa to such a degree that they functioned abnormally, inducing stasis and altering the chemical nature of the bile. In this case the inflammation and not the infection would be the direct causative agent. (Experimentation has shown that damage to the wall of the gallbladder interferes with the function of its musculature.<sup>19</sup>) It hardly seems conceivable that the amount of inflammatory reaction shown in Figs. 7 and 8 could be directly responsible for the formation of gallstones (unless it were concerned with that other process, *i. e.*, cholesterosis), and in the great majority of cases of cholelithiasis inflammatory reaction in the vesicle is slight.

To be sure, some workers have produced gallstones experimentally by infection of the gallbladder, either injection of bacteria into the blood stream or directly into the wall,<sup>27</sup> but such methods do not necessarily indicate a natural process. The significant point may be the induction of stasis by damage to the musculature.

The work of others, notably Denton<sup>35</sup> minimizes the rôle of infection in gallbladder disease and incidentally in cholelithiasis. In the study of 1,000 specimens he has come to the conclusion that the so-called acute cholecystitis is due chiefly to a mechanical cause, a stone impacted in the cystic duct. This interferes with the lymphatic and venous drainage of the gallbladder, producing pronounced congestion, edema, and at times leading to gangrene. Even so, the evidence of infection in these cases is almost nil.

Denton holds that if infection were a causative agent, one should be able to demonstrate bacteria in the wall of the gallbladder by staining methods in a fair proportion of the cases. This he could not do.

To be sure, blockage of the cystic duct may develop an inflammatory reaction, throwing out a protein-rich exudate into the lumen of the gallbladder, which is concerned in colloidal changes involved in gallstone formation; but I wish again to point out the difference between infection and inflammatory reaction. We may find bacteria in the wall of the gallbladder which has been contracting and otherwise functioning normally, though, of course, a massive infection might lead to acute inflammatory reaction, crippling of the musculature and stasis. As previously mentioned, often there is in cholelithiasis no marked evidence of inflammation, even with tremendous stone formation. The stones themselves, however, may irritate the wall of the gallbladder as it contracts, producing ulceration and possible secondary infection, resulting in a chronic inflammatory process leading to marked fibrosis. This happens with a solitary cholesterol stone or with stones formed through cholesterosis of the gallbladder.

Naunyn<sup>22</sup> was one of the first to advance the theory involving infection as a cause of cholelithiasis. He held, however, that stasis from some other cause was a necessary agent predisposing to invasion chiefly of the *Bacillus coli communis*; perhaps through a backflow of duodenal contents via the common bile duct. This produced a "stone-forming catarrh." The deleterious action of the bile on the mucous membrane of the gallbladder contributed to this catarrh, resulting in a disintegration of the mucosa, its degeneration, with the production of cholesterol, finally resulting in an amorphous mass of cholesterol and organic debris which was the mother substance of gallstones.

Aschoff,<sup>12</sup> however, disagrees with Naunyn's theory that cholesterol (and also calcium) which goes to the formation of gallstones can all be produced in the gallbladder as a result of infection and degeneration and emphasizes other factors. He points out that numerous experimenters have found that increase of cholesterol in the food will result in

an increase in the blood, and finally excretion of a larger relative quantity in the bile. As evidence against the production of cholesterol by the gallbladder he cites the work of his pupil, Torinomi, who ligated the cystic duct in animals and examined one-half the bile before, and the other half several days afterwards, finding no increase of cholesterol on the second examination. Aschoff further points out that in the cases where there is a solitary pure cholesterol stone there is usually no evidence of inflammation of the gallbladder. There must then be some other explanation for the formation of such a stone. He notes that Dewey has produced cholesterol stones by feeding of large amounts of cholesterol to rabbits. Chalatow, also, by stuffing cholesterol dissolved in sunflower oil produced lipoid infiltration of the epithelium of the gallbladder. Then, too, Torinomi's experiment showed absorption rather than increase of cho-



Fig. 9.—Agglomerate Stones. Photograph taken for detail of the stones in Fig. 3, in all probability formed by agglomeration of broken-off masses such as that indicated by the arrow in Fig. 3, and those in Fig. 10. These masses have become rolled and compressed into balls by the contraction of the gallbladder, indicated in Figs. 1 and 2. Note the marked similarity of the lobulated masses, and of the polyps in Fig. 10. The surface of the stones is slightly worn by friction one upon the other during contraction of the gallbladder.

lesterol by the gallbladder. Aschoff draws the conclusion that the pure cholesterol stone must be due to some disturbed metabolism consisting of increased secretion of cholesterol by the liver, and its crystallization in the gallbladder. In starvation, for instance, due to breakdown of the bodily fat, there is an increase of cholesterol in the bile. Stasis of this overloaded bile in the gallbladder may lead to precipitation, especially if there is a diminution of the bile salts.

Aschoff expresses the belief that infection, or inflammatory disease, such as brought about by impaction of a stone





volved could possibly have been infection.

Whether the primary condition is cholesterosis, general metabolic disturbances, liver changes, or infection of the gallbladder, practically all students of this subject have agreed that *one factor necessary to gallstone formation is stasis*, either in the ducts or gallbladder. This has become more obvious in recent years since we have discovered that the human gallbladder empties itself partially or completely after ordinary meals.<sup>38</sup> If it functions normally in this respect, there is little opportunity for the collection of debris in the gallbladder leading to cholelithiasis. Unless the cystic duct were very small the cholesterol crystals, epithelial debris, leukocytes, and what not, would be expelled along with the bile after eating, and an influx of fresh



Fig. 12.—Ball-valve Stone in Gallbladder. Cholecystograms showing a contracting gallbladder with a stone of the same nature as those in Figs. 1, 2, and 9; probably produced by cholesterosis. On the left is the resting gallbladder; on the right, the gallbladder contracting after a meal, tending to impact the stone in the cystic duct (arrow). This produces biliary colic. By pressure it interferes with venous drainage; also emptying is prevented, with accumulation of mucous, distention, and ischemia, finally resulting in acute inflammation. Alternate blocking and refilling, mixing bile with exudate, favors precipitation from the bile<sup>1</sup> and deposition on the stone, as in Figs. 13 and 14.

bile several times a day would keep the vesicle effectively flushed.

I have produced in cats hard, black masses similar to gallstones simply by inducing stasis in the gallbladder through fasting and dehydration. The animals were kept under barbital anesthesia, neither eating nor drinking. After 5 to 15 days, there were numerous fine particles in the concentrated bile of the gallbladder, varying in size from dust to 1 to 2 mm., and varying in consistency from semisolid to solid.<sup>39</sup> By cholecystograms I have demonstrated lack of emptying for one week in the gallbladders of dogs during simple fasting,

illustrating the fact that the vesicle tends not to empty if for any reason the normal digestive stimulus is lacking.

*Stasis of bile in the gallbladder as a predisposing factor in cholelithiasis* may be brought about in numerous ways.

*Anomaly of structure* either in the gallbladder, in its relation to the liver, or its peritoneal attachments, may in all probability interfere with its emptying. In Fig. 11 is an example of congenital deformity resulting in disease through interference with function. Stasis was produced by the constriction, leading to stone formation and secondary inflammatory



Fig. 13.—A Giant "Combination" Stone. It measured 5 by 10 cm. The central stone is seen, the other masses having peeled off in desiccation. The original was a solitary, crystalline cholesterol stone. Then material like that in Fig. 9 became impacted upon it, seen at the top of the central mass. Afterward, during stasis and inflammation, other bile constituents were deposited upon the surface,<sup>1</sup> making the single giant "combination" stone. It was contained in a giant gallbladder, as large as a small stomach. The stone ("believe it or not") was impacted in the ampulla. The gallbladder behind the stone contained nearly a pint of highly concentrated bile with numerous particles of what appeared to be the same material as that which had collected on the surface of stone. This illustrates three phases of gallstone formation. First, the solitary, crystalline, cholesterol stone; second, addition by cholesterosis (as in Fig. 14); third, addition by deposition of precipitated matter from the bile, in this case due to blockage of the cystic duct as shown by Fig. 12.

changes. Abnormal peritoneal attachments (which are common) include the so-called transduodenal bands.<sup>40</sup> These structures, made of thin sheets of tissue like the peritoneum, may extend from the margin of the gastrohepatic ligament over onto the gallbladder or liver beyond, down across the second part of the duodenum to the lateral abdominal wall, or to the colon. Sometimes the gallbladder

itself is attached to the liver by a mesentery. Changes in relations of the gallbladder to the ducts, or possibly a torsion where the gallbladder is abnormally free, may induce stasis. Sometimes torsion of the gallbladder produces a condition analogous to blockage of the cystic duct by a stone—pronounced edema, inflammation, and even gangrene.<sup>41</sup> It is conceivable that repeated torsions spontaneously relieved would produce repeated in-



Fig. 14.—Specimen Illustrating Factors in Stone Formation. Slightly enlarged. The only stone in the gallbladder. The original was a solitary, crystalline cholesterol stone, indicated by the wide central band. The top is capped by material produced in cholesterosis similar to that of Figs. 3, 9, and 10. While this material was yet soft, the solitary stone, by repeated impaction in the ampulla upon contraction of the vesicle, pressed it over the end, where it became adherent. At operation the stone was found impacted in the ampulla, having produced interference with the circulation enough to cause acute cholecystitis. At the other end of the stone is a deposit of bile-stained material. The probably here is that the stone, impacted in the ampulla, filled most of the gallbladder as it contracted, leaving the hollow end hanging free in the bile at the fundus. Two processes have occurred: deposition of material from concentrated bile on the bottom end of the stone; and, coincidentally, solution of the cholesterol crystals of the original stone by the lake of bile at the fundus—indicated by a sharp line of erosion (arrows). This is evidence that solution may occur, presumably by the bile salts. Certain conditions may favor deposition, others solution, of cholesterol.

flammatory exudation into the lumen of the gallbladder, mixing with the incoming bile when the obstruction was relieved, bringing about a condition favorable to the formation of mixed cholesterol-calcium-bilirubin stones with a protein base.

Also, failure of the normal physiological action of the musculature of the gallbladder for any reason, such as lack of the adequate stimulus, whether it be through the sympathetic nervous system or through the effect of some hormone, leads to stasis. Any condition in which the digestive system is inactive, such as anorexia, may react unfavorably upon the gallbladder; especially since the absorption of some food material, *i. e.*, fat, seems to be necessary to emptying.<sup>16, 28</sup> In bodily states, like typhoid fever, with all the vital forces at a low ebb, including the digestive system, it would seem entirely possible that the gallbladder could go days and weeks without emptying. If at the same time the character of the bile were altered by the condition of disease, it is easy to suppose that gallstones might be formed simply from the altered physiology of the biliary system, and not at all necessarily from infection. Furthermore, if the typhoid bacilli happened to be present in the lumen of the gallbladder, as elsewhere in the body, they might be included in the mass forming into gallstones. This would explain their presence without assuming an active rôle in the process.

Inflammation of the gallbladder from any cause, when it reaches the stage to prevent the normal contraction of the musculature, will automatically induce stasis. This may occur either in the acute inflammatory process or in the chronic case exhibiting marked fibrosis. It makes no difference what the original cause, whether infection from some other focus, or coming as a result of cholesterosis, or following the blockage of the cystic duct by a stone, or from irritation of stones in the lumen—inactive musculature means stasis.

Occasionally we find a gallbladder which during the Graham test does not empty for hours, perhaps even a whole day, after the administration of one or more fat-rich meals. This, of course, is decidedly abnormal and would theoretically predispose to cholelithiasis. If the emptying time is greatly prolonged, we are always suspicious of a stone blocking the cystic duct. Upon rare occasions a patient is found in whom, under the Graham test, the gallbladder is not observed to fill, even by the intravenous method, yet at operation the vesicle contains nor-

mally concentrated bile and gives no explanation for the lack of filling with the opaque material. The few patients in whom this occurred were in rather poor physical condition. The probability is that the stimulus to emptying had not been adequate, the bile had remained in the gallbladder, become concentrated, and, since the gallbladder was distended with concentrated bile, there was no room for entrance of bile containing the radio-opaque material.

The older books have a good deal to say about lack of exercise, tight lacing in women, etc., being predisposing factors to stasis in the gallbladder. This idea is based upon the mechanical theory of emptying; that is, that the vesicle empties from pressure by descent of the diaphragm with respiration, by increasing intra-abdominal pressure through muscular action, etc. It has been adequately proven physiologically that the gallbladder does not empty this way.<sup>16, 17, 18, 38</sup> Therefore, these are not direct factors in stasis. To be sure, lack of exercise or other unhygienic mode of life might reduce the physical condition to the point where the bodily processes were not working normally, including the musculature of the gallbladder. Since the gallbladder empties by its own contraction, any factor which induces stasis outside of the obstructive conditions, acts by interfering with the action of its musculature. I repeat that a normal gallbladder expels from one-half to three-fourth of its contents, possibly more in some cases, after an ordinary meal. If this happens two or three times a day, it does not seem possible that stones can form in the gallbladder. What matter if there are a few masses of desquamated epithelial cells or free-floating crystals of cholesterol in the bile of the vesicle, or even bacteria or inflammatory débris, when these are pushed out regularly by vigorous muscular contraction.

On the other hand, considering the static gallbladder as a test tube containing an abnormal bile, it is interesting to see what changes might occur leading to cholelithiasis. One of the most important investigations on this question has been made by Dr. Harry B. Weiser,<sup>1</sup> who has produced *artificial gallstones by the methods of colloidal chemistry*.

Weiser recognizes the commonly ac-

cepted fact that cholesterol is held in the dispersed (colloidal) state in the bile by the peptizing action of the alkali cholates, but points out the additional fact that cholesterol is much more soluble in fat than it is in a solution of bile salts. For instance, in an 8 per cent solution of sodium glycocholate, held for several days at body temperature, 100 c. c. took up but 0.2 gm. of cholesterol, whereas 100 c. c. of olive oil dissolved 8 gm.

"Since the bile may contain 1 per cent or more of fatty material it is apparent that one-third to one-half the cholesterol in normal bile is dissolved in the emulsified fat. Moreover . . . any excess cholesterol tends to concentrate around the fat droplets. [It is pointed out in this connection that bile salts have an indirect action by emulsifying the fat.] When the droplets of fat are coated with a film of cholesterol there is a marked tendency to form clumps of droplets. . . . For the formation of large cholesterol crystals from the minute particles (collected around the fat droplets) it is necessary for the emulsifying film of sodium glycocholate to be broken so that cholesterol can come in contact with the saturated fat droplets. Under such circumstances it would be expected that the minute particles would dissolve and reprecipitate out in larger units. There proved to be two relatively simple methods of breaking the glycocholate film on the droplets. First, adding a trace of acid which converts the glycocholate to glycocholic acid, which is not an emulsifying agent; second, allowing the sample to dry thus causing the film of hydrophylic emulsifying agent to crack."

Weiser performed such an experiment, which resulted in the formation of large feathery cholesterol crystals adherent to the fat droplets. He separated this fat-cholesterol mass by centrifuging, then "after absorbing the excess fat with blotting paper the mass was formed into a ball and dried. The result was a relatively hard, crystalline mass simulating the natural pure cholesterol stones in appearance, composition and properties. . . . In the light of the above series of experiments the mechanism of the formation of cholesterol stones in the absence of inflammation due to infection is believed to be as follows: In bile stasis resulting from anatomical [see Fig. 11] or physiological abnormalities [previously discussed] the bile collects and concentrates in the gallbladder, where it may remain for a long period. During this period of stasis there may be an infiltration of cholesterol from a hypercholesterolemia blood, and a decrease in the amount of alkali cholates which are responsible for retaining the fat in the form of an emulsion as well as the cholesterol in the dispersed state. In the absence of infection a decrease in alkali cholate may result from either or both of the following causes: (1) A change in the pH of the bile, from the alkaline to the acid side, thereby converting the alkali salts to the insoluble glycocholic acid, which is neither an emulsifying agent for fat nor a peptizing

agent for cholesterol; or (2) a physiological change in the gallbladder wall which allows resorption of the alkali cholates. . . The disappearance of alkali cholates either by conversion to glycocholic acid or by resorption, causes precipitation of cholesterol. This is, of course, most marked in highly hypercholesterolated bile. The excess cholesterol collects around the fat droplets, which tend to coalesce as the cholates are gradually removed. Clumps of fat interspersed with cholesterol result, and the process of solution of the finely divided particles and subsequent reprecipitation in large needle-like crystals binds the mass together. The continuation of this process for a long period leads eventually to the concrement which consists of relatively large crystals of cholesterol together with a small amount of enclosed fat. . . Particular attention should be called to the importance of fat in the synthesis of pure cholesterol stones. Not only does it serve as a collecting agent which brings together the particles of precipitated cholesterol, but its solvent action is responsible for the growth of the interlacing crystals. Since the bile contains no solvent for cholesterol except the fat, the presence of the latter is essential in the formation of pure cholesterol stones."

The stones in Fig. 9 represent those formed by another process; that is, the agglomeration of masses of desquamated epithelium containing cholesterol. If these stones are broken open one will find that there is a crystalline structure in the interior of a radiating character. It appears that according to Weiser's findings the probable explanation of this crystalline interior is that, since the forming mass contains more or less bile along with degenerated epithelium, there would be considerable fat. This would facilitate recrystallization of cholesterol in the interior of the stone, leaving the outside, however, in the original condition, exhibiting the masses of material as they were broken off from the mucous membrane.

Weiser also reproduced experimentally the so-called "infectious stones."

"The marked inflammation accompanying an infection in the bile ducts or gallbladder introduces into the bile irreversibly precipitating hydrophylic colloids such as serum albumin, globulin and fibrin. If cholesterol or calcium bile pigments separate in the presence of such colloids there is mutual adsorption with the result that the whole is united into a coherent mass, giving what is sometimes termed a colloid-crystalline stone as distinct from the pure crystalline stone considered in the last section. . . Adsorption of the bile pigments or their precipitation as the calcium salts stains the stone [Figs. 13 and 14]. . . The so-called calcium salt of the bile pigment is probably an adsorption complex of indefinite composition. . . Obviously the inflammatory process introduces numerous nuclei on which the mixture of

cholesterol and hydrophylic colloids will collect. Because of the pressure of the gallbladder the stones are seldom spherical, but are faceted and usually of widely varying shapes."

By the methods of colloidal chemistry Weiser produced experimentally the layered or banded mixed stones, explained in this way:

"From a survey of the conditions which result in the formation of the so-called 'layered' stones and the experimental results given in the previous section, it would appear that the formation of such concretions is favored or initiated by inflammation, which yields irreversibly precipitated protein material, such as fibrin and albumin. Pathologic changes bring about precipitation of the cholesterol, carrying calcium with it, the nature of the precipitate depending upon the amount of hydrophylic colloid present. Into this mass the colloiddally dispersed bile pigments diffuse and are precipitated in the form of rhythmic bands. The structure and arrangement of the bands are influenced by the shape of the mass, its density due to the pressure of other stones, and by variations in the composition of the bile fluid. After the bands are formed the structure may be invaded by radial crystallization of the cholesterol, cracks may develop, further deposition of the cholesterol may occur, or the stone may undergo alteration in other ways, producing the wide variety of forms which are found in gallbladder disease."

#### SUMMARY

The first essential in cholelithiasis is a bile from which the materials of gallstones readily separate—one which becomes so altered that solids are not retained in solution or colloidal dispersion.

Cholesterol is the chief substance concerned with gallstones; it is held in dispersion by the action of bile salts and bile fats. Excess of the cholesterol, lack of the salts and fats or changes nullifying their action, allow precipitation.

Hypercholesterolemia, due to conditions such as pregnancy, diabetes, or endocrine disturbances, leads to excess of cholesterol in the bile.

Disturbance of the liver, from infections, toxic damage, obstruction, or metabolic states, may so alter physicochemical relations in the bile that crystallization or precipitation occurs.

For stone formation a lake of bile is necessary—furnished by obstruction or stasis in the ducts or gallbladder.

Stasis in the gallbladder is induced by failure of the musculature through lack of adequate stimulus or from inflammation, as well as obstruction by stone.

Inflammation as a result of primary

infection may occur, but it usually follows obstruction or irritation by stones.

Infection is more often secondary to stones produced through metabolic disturbance and stasis, than primary.

Cholesterosis (strawberry gallbladder), probably the result of hypercholesterolemia, metabolic disturbance or the liver and dysfunction of the gallbladder, leads to the formation of agglomerate stones. Inflammation, always slight, seems to be secondary, not primary.

Artificial gallstones, resembling those of pure cholesterol, and layered stones of the so-called "infectious" type, have been produced in vitro by the methods of colloidal chemistry.<sup>1</sup>

In man the essential conditions for gallstone formation are a bile in which there is a tendency to crystallization and precipitation; and a static extrahepatic biliary system furnishing a lake in which the necessary physicochemical changes may occur.

This paper undertakes to give a concise discussion of the main trends of thought upon gallstone formation. The rôle of infection is minimized; and that of metabolic and chemical changes, and stasis, emphasized. The mechanism of stasis is described.

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## CORONARY THROMBOSIS—SOME POINTS IN THE DIAGNOSIS AND PROGNOSIS

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Since this topic was selected for discussion two men of great prominence in national politics have passed out of public life with the newspapers reporting death as due to "acute indigestion."

This misnomer continues to be employed, though the localization of the symptom—pain—on which it is based has long since been proven to be caused by the asphyxiation of the cardiac muscle, or infarct, following a thrombosis in a coronary artery. And yet I am sure many physicians have in their care patients who have had similar accident; in fact, some physicians have been victims and are now the living proof of the fact that there is a hopeful outlook and future for those who may have experienced such an accident. Because of the frequency of the condition and in the hope that a discussion of the topic might be fruitful I was persuaded to undertake the presentation of some of the main points.

Let us return for a moment to consider the situation as it was when, at a meeting of the College of Physicians, July 21, 1768, William Heberden read his paper in which he said: "There is a disorder of the breast, marked with strong and peculiar symptoms, considerable for the kind of danger belonging to it, and not extremely rare, of which I do not recollect any mention among medical authors. The seat of it, and sense of strangling and anxiety with which it is attended, may make it not improperly be called angina pectoris.

"When a fit of this sort comes on by walking, its duration is very short, as it goes off almost immediately upon stopping. If it comes on in the night, it will last an hour or two; and I have met with one, in whom it once continued for several days, during all which time the patient seemed to be in imminent danger of death.

... Time and attention will undoubtedly discover more helps against this teizing and dangerous ailment; but it is not to be expected, that much can have been done toward establishing the method of cure for a distemper hitherto so unnoticed, that

it has not yet, so far as I know, found a place or a name in the history of diseases."

As we reread these abstracts it is evident that Heberden described two distinct types of attacks and to-day these are grouped under two diagnoses. In one, the pain begins and increases steadily and progressively with continued effort and decreases promptly with rest. In the second the pain comes on and persists, even though the victim may be at rest. In this brief way Heberden described the two common phases of coronary artery disease, but the distinction in his description of the onset and course does not appear to have been recognized in his often quoted first description. It required nearly a century and a half before differentiation and distinction of the two pictures was recognized and the pathological etiology established. It is, therefore, only continuing the confusion and can serve no good purpose to speak of "Heberden's angina" when intending thereby to convey the idea that pain comes on with exertion and passes with rest, as contrasted with pain that persists even when at rest—Heberden described them both. But in those days the difference in pathology had not been discovered. Nor should one fail to recognize that pain is the early symptom of blood-volume incapacity of the coronary artery even if unassociated with the "sense of strangling and anxiety" which Heberden recognized and emphasized by selecting the Latin word "angina." But the free translation, a sense of impending dissolution, indicates a symptom which is not present in all cases of coronary disease either with or without thrombosis. It is difficult to visualize the pathology of conditions which have no cardiac symptoms, yet are dubbed "angina" by some authors; and yet it seems most important to approach the subject from the standpoint of etiology.

**TYPICAL PICTURE.**—The typical clinical picture of an attack of coronary thrombosis which has emerged includes five

points: (1) a history of a rather startling and surprisingly sudden onset of a persistent increasing discomfort often becoming a real pain in the sternal region; (2) this is usually accompanied by some degree of definite circulatory shock; (3) within a few hours some fever (rectal temperature 100° F. or over) develops; (4) a leukocytosis (10,000 to 20,000 or more) is found; and (5) within a day or two, if carefully searched for, may be heard a pericardial friction rub, which is usually of brief duration.

**AGE AND SEX INCIDENCE.**—Usually the patient is a man in the sixth decade or older, less commonly in the fifth, and rarely in the fourth decade or younger. From one-third to one-half have hypertension. It is rare to have a woman present the picture, but they do have the disease, and its recognition should not be refused nor the situation confused by calling it "pseudo-angina."

**PATHOLOGIC PHYSIOLOGY.**—Coronary thrombosis is a complication of coronary artery disease which is often revealed in two stages: the first, by breathlessness on exertion, and the second, by sternal pain on exertion. Atherosclerosis may be general or accenuated in the coronary arteries. The function of these arteries is to supply the heart muscle with a sufficient quantity flow of blood at all times and particularly when the extra demands of exertion are made. To supply oxygen and carry away the products of muscle activity by increased flow may be within the capacity while the patient is quiet or sitting, but when disease has decreased the quantity flow, then muscle action quickly absorbs the oxygen and the accumulating metabolic products of action are not removed. It has been demonstrated repeatedly by embolic blocking of peripheral arteries during life, as well as by postmortem findings in the heart, that pain, severe and persistent, results from the cessation of blood flow in muscle which is contracting. It is assumed that the minute flow of blood must be increased to meet the demands of increase exercise. It is, also, assumed that the arterial capacity flow can be increased by the acceleration of the heart rate. But, in disease of the arteries, the capacity is reduced and first there is dyspnea only; then, as the decrease in functional capacity

continues, a point is reached when even with acceleration the flow is insufficient, and it is insufficient for such a period that both an anoxemia and an undue accumulation of waste products result. At this time there is pain. The reduction of circulatory demand by rest permits the decreased flow to once more supply all the requirements.

These assumptions help us to understand the history of the attacks of pain. Infarcts and healed scars of old infarcts, are found in many hearts without any previous clinical or subjective symptoms having been recognized, probably because the onset was slow and progressive.

**THE PAIN.**—In describing sensations each patient selects such words as come within the range of the personal vocabulary and are in sympathy with the introspective nervous reactions. There will be the term indicative of low intensity of discomfort, while another may appear to suffer acutely and with a high degree of apprehension. It is important, therefore, that the apparent and visible reaction, or the vigor of the language in which the complaint is couched does not mislead in an estimate of the degree of damage. Thus the absence of fear of the result, or absence of the "angor animi" of the older authors, should not be considered confirmation of the noncardiac origin of the complaint. Some patients appreciate pain much more keenly and have a much wider vocabulary than others—patients may be hyper- or hyposensitive as well as better informed in choice of words.

In eliciting the story of the attack it is very important to encourage the patients to describe the condition in words of their own selection and relate the order of events immediately preceding, at the time of, and subsequent to, the attack.

Thus the terms used may describe merely a discomfort or a pain as burning, dull, sharp, or stabbing in character. Or the feeling may be one of pressure, or of compression, or it may be even exploding in character. Sometimes it is a strangling or threatened shutting off of the breath, and then it may be associated with the fear of impending dissolution—the "angor animi" mentioned above.

The onset may be of low intensity or severe, but usually it increases in severity to its height in a few minutes, which may be agonizing, then gradually re-



gressing. But it usually requires hours or days to disappear. It is important to recognize the persistent character of the pain and that it does not have the periodic or rhythmic recrudescence that so often accompanies injuries of the abdominal viscera.

**Superficial Area Involved**—It is helpful to let the patient outline with his finger the area at which the pain was first felt and its enlargement or direction of radiation. Usually the discomfort is felt first at the lower gladiolus, the ensiform, or epigastrium, less frequently at the manubrium, and as it increases in intensity, it usually spreads to the left pectoral region, the left shoulder or arm, and wrist, the left side of the neck, and thence to the left interscapular. Often there is radiation to the right shoulder and arm or it may be felt on both right and left and sometimes over the whole anterior thoracic region of both sides. The pain may be referred to the upper abdomen.

The head zones may be sensitive and easily outlined and, as the acuteness of the symptom subsides, the area may be the site of diffuse soreness.

**Reaction to Pain**—The patient may react to the attack of pain by remaining quiet, and it has seemed to me that this is usually true if there has been a former period of pain on effort. In other patients there may be restlessness and actual pacing the floor in distraction. If the attack is severe, some patients very soon become evidently critically ill and haggard in appearance. This is true particularly of those with the greater degree of shock.

**ASSOCIATED SHOCK**—With the onset and development of the attack of pain vomiting may occur, and there are usually varying degrees of circulatory shock, such as pallor, tremor, accelerated heart action, and a cold clammy sweat.

**FEVER**—The estimation of fever should be made only on rectal temperatures. These findings may show no increase or only a rise of a degree or two for a day or two. If a large infarction has occurred, it may be accompanied by a temperature remaining for a week or longer. There are many patients who have a clear history of infarction and subsequent pain on effort and yet do not show temperature, pulse, leukocyte, or electrocardiographic changes.

**THE LEUKOCYTOSIS**—The leukocyte count in very mild cases may not be disturbed, however, when the count is over 10,000 and under 20,000 the volume of heart muscle involved is assumed to be less than if the count is over 20,000. That is, there is assumed to be a relation between the volume of the muscle impaired by the occlusion and the leukocyte count. If the count persists for several days, its continuance is considered indicative of a greater injury than when it subsides in a few days.

In estimation of the relation of counts and degree of injury it is essential that a pneumonia or pulmonary infarction can be excluded.

**PERICARDITIS**—The pericardial rub is usually heard below the third rib and between the sternal edge and the apex. It may be heard for a few hours only or may persist for two or three days. It has a definite relation to the size of the infarction, and while it persists, the temperature, pulse rate, and leukocyte count are increased.

**PULSE RATE AND RHYTHM**—The radial pulse may not be altered at first, or occasionally it may be slowed, but usually it is accelerated and returns to the previous rate only after several days. The volume of the pulse is small and often difficult to feel or count.

The rate may vary and the rhythm remain regular throughout the period of the illness and convalescence. Less rarely there may occur a new mechanism, as auricular fibrillation, or flutter, auriculo-ventricular block, and still more rarely ventricular tachycardia. The onset of a new rhythm may obscure the recognition of the real accident—the thrombosis of a branch of the coronary.

**BLOOD PRESSURE**—Usually with the onset of the thrombosis the blood pressure falls promptly. In some hypertensive patients there may be a difference of over 100 mm of mercury before and after the occlusion. Occasionally there is a fall of only a few points, but it is not uncommon to have the systolic pressure fall below 100 mm.

If the pain is acute, there may be a rise of pressure followed by a fall on the relief of the pain. As restoration occurs, the pressure may return to its former level.

The low systolic pressure may be an indication of the greater gravity, but I have seen men with a systolic reading under 75 mm. gradually recover to become ambulant patients with several years of life.

It is probably correct to state that attacks of pain on effort are associated with a rise of pressure but the occurrence of thrombosis is accompanied by a fall in systolic pressure.

**ELECTROCARDIOGRAPHY.**—The electrocardiogram will be most helpful if taken systematically in frequent series as it may show definite changes which are positive evidences. However, there are coronary accidents which do not show alterations in the electrocardiogram early but do show changes later and vice versa, and sometimes there are no changes in the electrocardiogram either early or late. We must conclude, therefore, that the electrocardiogram may be considered positive evidence, but the absence of changes does not preclude a coronary accident.

The occurrence of auricular fibrillation or bundle branch block seems to add to the seriousness of the outlook.

The changes in the S-T deviations of Lead I have been ascribed to the occlusion in a branch of the left coronary and the S-T changes of Lead III are associated with right coronary occlusion, but since these arteries do intercommunicate and are not limited to the right or left lateral portions of the heart, the interpretations of the deviations must not be too specific. The use of special leads in addition to the standard leads, may be of great value in confirmation of the condition.

**CORONARY ACCIDENTS WITHOUT PAIN.**—The sudden onset of congestive failure—venous congestion, enlarged liver, edema of the ankles—in an elderly man or woman, in the absence of some definite infection or other condition which might affect the circulatory system, should suggest a coronary accident; and, if associated with the onset of nocturnal dyspnea, cardiac asthma, and Cheyne-Stokes' periodic breathing (not three separate symptom entities, but only three names for phases of the same disorder), should strengthen the suspicion and cause a search for more evidence—pericarditis, leukocytosis, and electrocardiogram.

**EMBOLI.**—Once a coronary artery is blocked, the effect is the formation of a

myocardial infarct which in turn may produce blood clot formation in the right or left ventricle, or in both. Fragments from these coagulated masses in the right ventricle may be broken off and carried as emboli into the pulmonary circulation causing a pulmonary infarct, sudden chest pain, dullness, auscultation changes, and x-ray shadows, and occasionally expectoration of bloody fluid. Clots formed in, or carried through, a septal defect into the left ventricle may be carried as emboli into the spleen, with left-sided pain; kidney, blood cells in urine; brain, impairment of the mentality, vision, or motor function; arm or leg, cyanosis and gangrene, with characteristic symptoms. The sudden onset of these indications of localized alterations of function should suggest the probable etiological pathology.

**DIFFERENTIAL DIAGNOSIS.**—The discomfort of thrombosis is not relieved by nitroglycerin as is the coronary disease with pain.

It is with the intention of describing the etiology that there are such qualifying diagnoses as neuritis, pleurisy, intercostal neuralgia, and acute indigestion which indicate inflammatory or painful conditions of the nerve trunk and pleura or functional incapacity of the digestive tract. Such diagnoses should be carefully and critically analyzed before acceptance.

**SPONTANEOUS PNEUMOTHORAX.**—Rarely a spontaneous pneumothorax may occur with such sudden and severe pain referred to the lower precordium and associated with shock—pallor, tremor, profuse perspiration, cold skin surface, rapid pulse and dyspnea—that a coronary accident may be suspected. X-ray examination of the chest and electrocardiograms may clear the picture.

**CHOLECYSTITIS AND CHOLELITHIASIS.**—Severe pain referred to the lower chest and upper abdomen with muscle tenderness and rigidity, nausea, vomiting, and shock suggest an acute abdomen as well as coronary thrombosis.

The previous history of the character of the pain, whether it recurred on effort, was referred to the left shoulder, left elbow, and left shoulder blade, and whether there is a sense of chest constriction, will indicate its probable coronary origin. If it occurs in a man over forty-five with other

evidence of general arteriosclerosis, it is more certain.

But if there is a previous history of long-standing colonic distention and flatus with periodicity of attacks and reference of the pain to the right shoulder blade, the gall-bladder should be suspected. If the patient is a woman under forty-five who is, or has been, obese, cholelithiasis is probable.

A duodenal or gastric ulcer which has ruptured is more common in men under forty, while a ruptured gastric carcinoma may occur in the age group over fifty.

**COMBINATION OF CORONARY DISEASE AND CHOLELITHIASIS.**—It is not easy to make the distinction or be satisfied that gallstones are present in a man or woman who gives the symptoms of both gallstones and pain with effort. A period of careful observation may clear the picture and an operation relieve both sets of symptoms.

**OTHER ACUTE CONDITIONS IN THE ABDOMEN.**—Tabetic crises may confuse at first but the history of the mode of occurrence and the physical findings should quickly bring assurance of the probable pathology.

Acute appendicitis, acute hemorrhagic pancreatitis, acute intestinal obstruction, and thrombosis of the mesenteric artery may each offer a confusing picture. The greatest help in distinguishing between them and a probable coronary thrombosis

may lie in the previous history and habits of the person with the description of the onset of the attack, its relation to shock, abdominal tenderness and rigidity.

**PROGNOSIS.**—No certain picture is possible, but there is better than an even chance to recover.

The most cheerful figures show that five out of six live through their first attack; one out of four lives more than a year after the attack.

Coronary accidents which do not terminate life within a year give the possibility of a continued and useful life.

A leukocytosis of over 20,000 appearing promptly and persisting several days indicates an extensive involvement of the muscle by infarction and a serious outlook. The infarct may be the site of rupture of the wall any time within the first month.

Severity of pain and behavior of the patient do not indicate the comparable degree of muscle damage, though the great degree of circulatory shock may accompany a greater volume damage.

If after healing the classification is II A or better there may be many years of useful life.

If congestive failure remains with a classification of II B, or worse, the probabilities of life are measured in months.

Cheerful adherence to a rest program of four to six weeks probably prolongs life.

121 EAST 60TH STREET

## DOCTOR'S FEE IS NOT A PRICE

The physician should not be led astray in these days of cost-accounting; the doctor charges a fee, not a price, says the *Westchester Medical Bulletin*. It drives the point home by relating one of those stories which are true whether or not they ever actually happened, a story about Whistler which is told by Albert Edward Wiggam. The great painter, it seems, once agreed to appear as an expert witness in a court case involving a question as to whether a certain painting was a genuine work of the artist whose creation it had been represented to be.

As soon as the witness was seated, the attorney, with due flourish, unveiled the canvas. Whistler took one look at it, pronounced it a fraud, and left the courtroom. The purchaser of the painting, at whose request Whistler had appeared, won the case and recovered substantial damages. When Whistler sent her a bill for \$1,000 for his services, his client protested: "How can you charge \$1,000 for the work of an instant?" Whistler's reply was: "I have charged you \$1,000 for the work of a lifetime."

This story illustrated the difference between a fee and a price. A price, of course, is based upon a calculable cost.

Physicians and other professional workers should remember this distinction, says the *Westchester county editor*. They should never attempt to justify any given fee on a cost basis. A professional fee computed on a basis of mechanical costs is not in any sense a professional fee. Those who attempt to standardize medical fees under any guise are laboring under a fundamental misapprehension, and the physician who listens to such an attempt is going to be sold a very costly gold brick.

Before the days of anesthesia, surgeons performed operations as fast as possible, to shorten the patient's agony. As a result, relates Dr. Howard Haggard, some of the more deft surgeons were little short of sleight-of-hand artists. They could amputate a limb so rapidly that close attention was necessary on the part of spectators or they missed seeing the operation entirely.

## THE UNIVERSITIES OF THE MIDDLE AGES

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It is customary in certain circles to disparage the Middle Ages, to call them the Dark Ages of history. Such disparagement is, however, scarcely justified. The Middle Ages unquestionably had many shortcomings, many vices, but they had also many virtues. Among the greatest of these virtues was the founding of the universities, the most important factor, the writer believes, in the development of modern culture and in the emancipation of the human spirit. If there were no other contributions on the part of the Middle Ages to civilization, that should insure them our everlasting gratitude. As Rashdall says, the institutions the Middle Ages have bequeathed to us are of greater and more imperishable value than the cathedrals. And the university is distinctly a medieval institution. Its ideals, its organization, its ceremonies, its titles, its offices, its degrees, its costumes even, have been handed down with very little change to modern times. Whatever differences exist are due largely to adaptations to local conditions.

While in this country the original university is legendarily a log with Mark Hopkins at one end and a student at the other, in Europe the universities arose in cities and kept pace with the growth of cities. Protected by the authority of an ecclesiastic or a prince or a self-appointed potentate, scholars could find in these cities leisure, emolument and fame, and in that way they could attract pupils. In Italy, where universities had their most rapid growth, they thrived in cities often ruled by tyrants, by men who combined a humanistic spirit with treachery, cruelty and every vice in the calendar. Even under such a bestial creature as Ezzelino da Romano—there was scarcely ever a more wicked ruler—the University of Padua flourished mightily.

Perhaps it should be explained in the beginning what was meant by the word "university" in the Middle Ages. It did not originally connote a place of higher learning, not a collection of schools or a corporation entitled to confer degrees. The

nearest analogue to our universities was called *Studium generale*. The word "universitas," employed usually with another word in the genitive, designated a corporation in its totality, as for example, *universitas magistrorum et scholarium*—university of masters and scholars. The word also bore an analogy to guild and was used very much like our phrase trade union to-day. As an indication of the significance of the word we have the story that some captives from Pisa imprisoned in Genoa organized themselves into a "*universitas carceratorium*," a university of prisoners.

In the beginning, teaching in what became the university was carried on in the homes of the masters or in places rented by them. In a number of instances, as is mentioned by Dante, the beginning seems to have been in houses of prostitution. At first, masters as well as pupils sat upon straw, the master having one sack more so that he might be able to dominate his hearers. In 1366, the students were ordered to sit upon the bare ground so that they might have "no reason to be proud."

There were, of course, some schools in Europe before the universities. They were known as cloister or monastic schools and as cathedral schools. Some of the cathedral schools, such as those of Tours and Chartres in France and Fulda in Germany, attained great fame. They were the homes of theology, of canon law and of philosophy, but as they were usually identified with a single personality, a famous master, they languished or perished when the master died.

The curriculum in these schools was by no means simple—at least not quantitatively; it comprised the two great courses of study so characteristic of the Middle Ages, the Trivium and the Quadrivium, the former being made up of arithmetic, grammar and music, the latter of dialectic, rhetoric, geometry, astronomy. Even to-day one finds frequent references in literature to the "Seven Liberal Arts" of the Middle Ages. Much research has been

expended on the chronology of the universities in order to arrange them in order of priority. With one exception such attempts have failed because the rise of nearly all the earlier institutions is veiled in obscurity. Of only one can we say with some assurance that it was first, and that is the School or University of Salerno.

Salerno enters the academic world picture at a very early date. Neither the time nor the manner of its founding is known, but unprovable legend ascribes it to the fortuitous meeting of four learned men, a Roman, a Greek, a Jew, and a Saracen. Some believe it owes its origin to the monks of the neighboring Monastery of Monte Cassino, but although the Benedictines may have had an influence upon the school it is unlikely that they founded or controlled it. If they had it would not have been under a dominantly lay influence—twenty-three out of thirty Salernitan professors were laymen. Salerno is important not only as a center for teaching but also because it preserved the Greek writings and had a share, largely through the mysterious Constantine the African, in introducing Arabic learning into Western Europe—and we owe a greater debt to the Arabs than is generally known. Another fact is interesting, namely, that the University of Salerno had the first definite medical code, very much like our NRA codes, and perhaps received with equal acclaim. It demanded five years of study with an examination at the end, and the doctors were enjoined not to make any compact with the apothecaries. Salerno never became a general university. It was soon overshadowed by neighboring Naples, although it lived on with fame dimmed until 1811 when Napoleon in conquering Italy put a finish to it.

Among the Salernitan writings that have come down to us, none is more renowned or better known to moderns than the *Regimen of Salerno*, a metrical medical work containing sound advice as to diet, bleeding, and ways of life in general. Few works in the history of the world have been copied and recopied and printed and reprinted more often. The poem has a special interest for us for it was dedicated to the King of the English. But who that was is uncertain; many assume it was Duke Robert of Sicily, son of William the Conqueror.

One of the earliest universities and one that still exists is the University

of Bologna, which had its hazy beginning sometime in the twelfth century or toward the end of the eleventh. It arose largely through the fame of two persons—Pepo and Irnerius who were both great legal scholars and attracted a multitude of students. In 1158 Frederick Barbarossa, Emperor of the Holy Roman Empire, granted to the students of Bologna two important privileges: freedom of travel and freedom from civil jurisdiction. The freedom of travel was particularly important in that it created in Europe the wandering scholar who traveled from place to place in search of knowledge and became such an attractive medieval figure.

The two privileges enjoyed by the students, together with a third, the right to choose their own masters, gave to Bologna a stronger lay influence and a greater freedom than prevailed elsewhere. These features extended to other Italian universities founded afterwards, they have never entirely died out, unless at the present time things have been changed in Italy.

Foreign students came to Bologna from all over Europe, the wandering scholars, at one time eighteen nations were represented there. The foreign students organized themselves into the University of the Ultramontanes, the Italians into that of the Cismontanes. It is interesting that the Bolognese students themselves had no right to vote and could not hold office.

Bologna at all times was a university of students. The students were dominant; not only did they select their masters, they held them to strict accountability. The professor who refused to take the vow of obedience to the students had no means of collecting his fees. He might not be absent without leave a single day. If he had an audience of less than five, he was fined as if he were absent. He had to begin at the sound of the bell and had to stop one minute after the sound of the next bell. He was not allowed to skip a difficult text or to postpone it for the next lecture. In other words, he had to punch the clock.

There was for years much opposition in Bologna to the establishing of a medical university. Finally, in 1306, it was accomplished and the university of medical students obtained the right to elect its own rector. But Bologna remained primarily a University of Law. In Bologna, as in Oxford in Paris and elsewhere, conflicts were frequent between the citizens and the students, between town and gown. One of

these recurring conflicts led to the emigration of some students and masters from Bologna; they settled in Padua and established a school there.

"Travio, since for the great desire I had To see fair Padua, nursery of the arts, I am arrived for fruitful Lombardy"

says Lucentio in "The Taming of the Shrew." Shakespeare knew Padua, the nursery of the arts, because many of his countrymen had gone there to study. Padua like other cities of Italy during the Middle Ages was the football of warring tyrants. When one studies the history of this turbulent period, when destructive and centrifugal forces held sway, one must admire the more the magnificent works of Mazzini, of Cavour, of Garibaldi, and of Victor Emanuel in unifying these disjointed states and making of Italy a great nation.

The writer has been much interested in the paradox not only manifest in Padua under the treacherous Carraras, but also in Milan, Florence, and other cities, that the worst tyrant was at the same time the most enlightened patron of art. Perhaps it is only history repeating itself when we see some of our grafting politicians and dishonest bankers filling their palatial homes, built with other people's money, with costly works of art.

Padua's fame began with the advent of a man known as Pietro d'Abano, called also the Conciliator because he wrote his medical articles in the form of "concilia," or consultations. He was an astrologer and a follower of the Arabs, in particular he was a so-called "Averrhoist," which in his day was tantamount to being a heretic. In fact, he was twice haled before the Inquisition and twice acquitted—a very rare event in the history of the Inquisition.

A legend has it that when d'Abano lay on his deathbed, he told his students and fellow physicians that he had devoted his life to three noble sciences, one of which made him subtle, and that was philosophy; the second made him rich, and that was medicine (that was in the Middle Ages); the third made him a liar, and that was astrology.

Padua was a more liberal university than most of the others, due perhaps to the fact that it started as an Averrhoistic school. Although a papal edict had commanded that non-Catholics should not be admitted to study at Padua or to receive degrees, the command was more honored in the breach

than in the observance, and a number of men, Protestants and Jews, received their diplomas at Padua, for example, William Harvey, Richard Mead and John Kaye, the Caius of "The Merry Wives of Windsor."

It was through Thomas Linacre, a graduate of Padua before Henry VIII's apostasy and one of the founders of the Royal College of Physicians, and a few other humanists that the Italian influence came into England so strongly during the Tudor period. The reader may remember, Queen Elizabeth was called the Italianate Queen; and the scenes of many of Shakespeare's plays are laid in Italy.

Among the great Italians who studied at Padua was Girolamo Fracastoro, the man who wrote the most famous medical poem in the history of the world, the poem on Syphilis or Morbus Gallicus. Another Italian graduate was Fallopius, after whom the Fallopian canal of the ear and the oviduct are named, and Harvey's teacher, Fabricio d'Acquapendente, the discoverer of the valves of the veins. Jerome Cardan, mathematician and physician, Malpighi, the discoverer of the capillary vessels, and Galileo, one of the greatest minds produced on the Italian peninsula, are also in some measure identified with Padua. We, the possessors of the English civilization, must not forget our debt to that small Lombard City.

Another early medieval university, by some considered the oldest of all, is that of Montpellier, the ancient Mons Pistillarius, so-called by reason of its commerce in spices. Its founding is credited to a group of Jewish physicians from Spain. In the early days there were frequent conflicts between the Judeo-Arab physicians from the Iberian peninsula and the Christian physicians educated chiefly at Salerno. However, in 1180, the reigning Duke William IV promulgated a decree that anyone whoever and of whatever origin he might be should have the right to give medical instruction without being called to account by anyone. Although the teachers at Montpellier had to be celibate, the spirit of the University was on the whole fairly liberal. Jews, except during temporary periods of intolerance, were allowed to teach there. Among such teachers the names of Jacob ben Machir and Samuel ben Tibbon have come down to us.

In 1220, Cardinal Conrad, descendant of a Swabian family, promulgated statutes

that contributed markedly to the growing fame of Montpellier. He laid it down as a law that no one should act as a teacher of medicine who had not been examined in it and had received the license at the hands of the Bishop of Maguelone, and that no one should be regarded as a student who did not in his studies follow the directions of his teachers. The rule regarding examinations applied however only to physicians and not to surgeons. Every student had to attend medical lectures for at least five years and was obliged to practice medicine for eight months or for two summers before being allowed to graduate. In 1350 the Master's degree was made a requisite for those who wanted to practice medicine. To achieve the doctorate, the candidate was required to pass sixteen examinations which were held by the professors in secret and were very costly. By the time the student attained the doctor's degree he had expended a little fortune, originally 16,000 francs, in time reduced to 8,150. In later years after the candidate had passed the examinations successfully, the beadle clothed him with a special red robe called the *Rabelais*. His comrades then, each in turn, gave him a sharp blow with the fist, an ancient custom much imitated in later ages.

Montpellier achieved its greatest triumphs in the thirteenth and fourteenth centuries.<sup>1</sup> The monk Caesarius of Heisterbach called it the "Fountain of Wisdom" and regretted only that the doctors did not believe in miracle-healing and would speak of it in an ironical manner. It had among its pupils and teachers men like Raymond Lull, Bernard of Gordon, Arnald of Villanova, Gilbertus Anglicus, John of Gaddesden, and most famous of all, Guy de Chauliac. Its decline to some extent was due to the religious wars, and the cupidity of the townspeople, but chiefly to the rise of Paris and of universities in Germany and Italy. In the early part of the sixteenth century it enjoyed a brief second blooming in consequence of the sojourn there of the incomparable *Rabelais* (1530 and 1539). But even in later times it was frequented by a number of famous medical men—Sydenham, Vieussens, Sylvius, Bauhin, Barthez, Grasset, and the botanists Sauvages and de Candolle.

The writer now asks the reader to travel northward to the river Seine, to the City of Light. The University of Paris is more interesting in its rise and development, more important to civilization than any other in the world. Its beginnings are undatable. Some say it was founded by Charlemagne or by his adviser, Alcuin, an Englishman, but there is no proof of that. If any one man may be looked upon as the founder of such an institution as the University of Paris, that one is Abelard. Abelard was in all respects a great scholar and a characteristic medieval product, a keen dialectician and an independent thinker, a crooked stick that fitted nowhere. He has, however, achieved, in a sense at least, an unwarranted fame, due to the fact that he was beloved by the gentle Heloise. She was a much inner person, the writer believes, than her lover.

Abelard had a tremendous following, wherever he went crowds of students accompanied him, and in that way, through the large numbers that came to Paris to listen to Abelard and to others, the University began. Unlike Bologna it was from the beginning a university of masters, not of students, a circumstance that had a tremendous influence upon its subsequent development. The forces in Paris were centripetal, while in Bologna they were centrifugal.

Paris was always under ecclesiastical control. The Pope was the supreme head of the University and at all important functions was officially represented by the Chancellor of Notre Dame. This absentee control continued well into modern times. Early in the thirteenth century, the Masters of Law, of Theology and of Medicine organized themselves into separate faculties with a dean at the head, it is then that the word "*facultas*" or faculty first was used. The Faculty of Arts had as its head a Rector who eventually became the dominating influence in the university. Both masters and students were compelled to be celibate—they were clerics and had the tonsure. Celibacy continued to be obligatory until 1452, when Cardinal D'Estouteville abrogated it, saying it was impious on the part of a doctor to be compelled to be celibate. The permission, however, applied only to the masters, the students were not allowed to marry. When, as occasionally happened, a married

<sup>1</sup>Henry of Montpellier was called to attend Eleanor, Edward I's Queen, on her illness and received on October 18, 1290, the sum of 13s 4d on account of syrups and other medicines purchased for the Queen.

student applied for his degree, he was rejected.

The students were a polyglot group who quite early in the history of the University organized themselves, for protection and for sociability, into four Nations—the English, the French, the Piard, and the Norman. In the fifteenth century, England became so unpopular in France that the English Nation thought it tactful to change its name to German. There is very little known about the inner workings of these four Nations. Only one thing has been revealed in late years—there is a new book on this subject—that is, the taverns they visited “in the habit of drinking up the surplus.”

Almost from the beginning, Paris attracted the most brilliant men in Europe who came to study and often remained to teach. Roger Bacon, one of the greatest names in English history, Albertus Magnus, Petrus Hispanus, afterwards Pope John XXI, the only medical men ever to occupy the papal chair; and St. Thomas Aquinas, called the greatest pure intellect of all time, were contemporaries at Paris. No wonder the University counted its students by the thousands.

The University of Paris, like similar institutions elsewhere had little real property and therefore had no board of trustees; there was no extramural body in control, as there is in our American universities.

The teaching of medicine in the University of Paris was in the hands of the Faculty of Medicine, an arrogant, intolerant, closed corporation endowed with important rights and privileges granted to it by the Kings of France and by the popes. The members were privileged to wear the long robe; the surgeons, who were not members of the Faculty and could not be, were permitted to wear the short robe, and the barbers who were the minor surgeons, were not allowed to wear any robe at all.

The instruction in the Faculty was in Latin and Latin was compulsory on the campus outside the classroom. It was said that only plowmen and swineherds and other rustics used the mother tongue. As the teaching and practice of surgery was not permitted to clerical persons and as clerics were the only learned men, surgery of necessity fell into the hands of the unlettered, into the hands of barbers or “barbitonsors,” as they were called. The fact that surgery started among the unlettered had a great influence upon surgery in

France and in England and unquestionably retarded its progress. In England to-day the separation survives to some extent—surgeons are very often called “Mister”—and not Doctor. Two other features served to accentuate the differences between the physician and the surgeon: First, the social status of the surgeon was much lower than that of the physician. Secondly, the medical men had a great many more saints. Their patron saint was St. Luke, but in addition they had as many as two or three saints for every disease, while the poor surgeons had only two really important sainted patrons—St. Cosmas and St. Damian. On account of this fact, they were always taunted by the medical men about their poverty in saints.

From records kept by the Faculty—the writer has in his possession an original Latin work—we know a great deal about the customs and regulations of the medical course. The Dean of the Faculty, though he was nominally subject to the first physician to the king, had in reality tremendous power. He was elected with elaborate ceremonies for one year. Coins were struck which carried the Dean's or the President's image or his coat of arms, a privilege, say the records, granted to the Dean before the memory of man.

The course of instruction was long and rigid. Work began at five o'clock in the summer and six o'clock in the winter, and there were four degrees or grades—bachelor, licentiate, master, and doctor. In the beginning a Master of Arts degree was not necessary, but as such a degree shortened the course, most students strove to acquire it. In 1426, over five hundred years ago, the Master of Arts degree became a definite requirement for the study of medicine.

At first the actual course of study was 32 months, but beginning with 1350 the Faculty required 36 months for those having the arts degree, 48 months for those not having it, and if the student came from a foreign university, the time was doubled. Anyone failing once was not afterwards eligible for a degree. Before being admitted to the examinations, the student had to swear that in case he failed, he would not avenge himself on his masters.

The examination began at five in the morning and lasted until noon, refreshments being served then at the candidate's expense. The examination was oral and consisted of questions on texts of Hippoc-



rates and Avicenna and in dialectical arguments. Here are some of the questions found in the book previously mentioned and in others: Is the loud voice warm? Is air, food, or drink a greater necessity?

There was also another examination which was called "quodlibetaire"—what ever you please. The student could virtually designate what he wanted to be examined on. Two grades were given in the examination—*sufficiens*, *incapax*. Two-thirds of the votes were necessary for a man to pass.

The Bachelor, after having gotten his degree in Paris if he wanted to go to higher degrees was obliged to engage in practice for two summers if he lived in the city, for two years if he lived beyond. Many bachelors remained to teach, somewhat like our "Fellows" to-day; their courses were called extraordinary courses, while those of the professors were called ordinary courses.

For the licentiate degree, four special courses were necessary—three had to be medical, one might be nonmedical. For reasons that are not apparent, many students for the nonmedical text chose Aristotle on animals and meteors. The student was admitted to this examination if he could prove he had studied in Paris 56 months, if he had the M.A. degree, and 68 months if he did not have the M.A. degree.

Before he could enjoy the newly acquired rights and privileges, the candidate had to receive official and religious consecration from the Canon of Notre Dame, a very formal, solemn function. Prior to this consecration, he had to pay courtesy calls on the Chancellor, on the heads of the church, on all of the professors, on the higher officials of the state, on the members of Parliament, and to make presents of sweetmeats to all the doctors—a very expensive obligation. Afterwards these costly sweetmeats were replaced by jetons or tokens, one for each professor.

On the Sunday following these preliminaries, the ceremony of "paranymphy," or "paranymphia," took place. It was a symbolic function in which the licentiate was united with the faculty, the dean being the paranymph, or, as we would call him today, the best man, at the wedding. The principal ceremony consisted of a very fulsome Latin oration in praise of the masters.

The doctor's degree was not obligatory, but most men took it. The examination was called the *vespary*. A few days later

the examination having been completed, the candidate, clothed in robe and fur-trimmed hood and accompanied by two Bachelors and two beadles, paid a visit to each doctor. Finally, he had to swear the following oath:

1. To observe faithfully the secrets, honor and practice, customs and duties of the faculty with all his power and no matter what may happen, never to go against them.

2. To render honor and respect to the dean and to all the masters of the faculty.

3. To aid the faculty against any one who undertakes anything whatever against the statutes or the honor of the faculty and especially against those who practice illegally and to submit to the punishments inflicted by the faculty in case of default.

4. To be present in academic costume at all Masses ordered by the faculty, to arrive at the latest before the end of the epistle and to remain until the end of the office, be it even a University Mass for the dead, under punishment of an "ecu," and likewise under a similar penalty to be present every Saturday at the Mass of the School, vacation time excepted.

This oath, as the reader will note, has nothing whatever to say about the duties of the doctor toward his patients, only about the honor and dignity of the faculty.

One more step remained and that was called the "acte de regence," which consisted in sustaining a thesis publicly. Thereafter the candidate was enrolled among the masters.

Some of the theses that the candidate had to defend were:

Is the necessity of death innate?

Does the fetus resemble the mother more than the father?

Is air more necessary than food or drink?

Is water more healthy than wine?

Is woman an imperfect work of nature?

Should literary men marry?

Religious observances played a prominent part in the students' lives. Masses were frequent—one was held on October 18 on St. Luke's day, the patron Saint of doctors; there was a mass for deceased doctors at which all students were required to be present. Another was celebrated for the repose of the souls of those whose bodies the students had dissected. The students and faculty were also compelled to attend and to take part in all processions in honor of the king or any of the king's

relatives. On St. Luke's day there was always a banquet and those who failed to be present were deprived of the right to carry a candle on what was called Purification Day. Banquets were held when the dean's appointment was ratified; when the roster was finished; in fact there was a succession of gastronomic solemnities that weighed heavily on the student's stomach and budget. This perhaps explains the penchant of our own time for medical dinners and banquets; they have an ancient lineage.

Now a few words about the statutes pertaining to surgeons. Surgeons could not aspire to the grade of doctor; if they did, they had to forswear absolutely by solemn oath their profession of surgery. Though eventually privileged to wear the mortar board and robe, they were not entitled to the benediction of the Chancellor of Notre Dame. Only in 1579 did they obtain that privilege from Pope Benedict XIII. There were constant quarrels between the surgeons and the barbers who were taking their trade away. The barbers wanted to do all the minor operations, and the medical faculty for purely selfish reasons fostered this quarrel, which continued until 1660. In the previous year the surgeons conceived the idea of admitting the barbers to their own corporation. That angered the faculty and they threatened to deprive the surgeons of wearing any robe and of bestowing any kind of degree. This threat brought the surgeons to terms; they agreed forever after to obey the commands of the faculty.

To a large extent, as has been stated, our present-day customs and ceremonies and academic degrees are derived from the University of Paris. Indeed it may be said that the University of Paris is the alma mater of all modern schools of learning, a fact that we should not forget. The history of Oxford and Cambridge is also full of interest and so is that of other early universities that have not been mentioned.

It was indicated earlier in this essay that some writers disparage the Middle Ages. Dean Inge, the Gloomy Dean, called the Middle Ages, "Battles of crows and kites." Another says he is glad he knows nothing of the ages that knew nothing. It is not easy to see why he wants to be so proud of that. Such a contemptuous attitude is in part due to a peculiar phase of cultural life that pre-

vailed in the universities and among the learned in general—it is called scholasticism. This word connotes a form of abstract speculation through which, it was held, all truths, physical and spiritual, could be reached. It was thought possible by a syllogism to arrive at natural truth. Scholastic philosophers concerned themselves more with the formulation of a problem than with a real understanding or solution of it. The method had its origin with the Arabs from whom it was taken over by the great churchmen of the Middle Ages. Anselm of Canterbury, the author of the famous dictum, "Credo ut intelligam"—I believe that I may understand—attempted to establish the truth of the doctrines of the church with such philosophical proofs as, independently of the authorities accepted by believers, would convince nonbelievers of the truth of these doctrines. This special method of argumentation or "dialectic" passed over into the profane sciences, into medicine and into law. Knowledge of natural phenomena could be attained by the mental processes of speculation and of dialectical discussion without any reference to external phenomena or external nature. Words became more important than subject matter, literal text than theme, binding than contents. Hardly anyone thought of testing truth by experiment. Only Roger Bacon had the courage to do this, and in consequence he was a prisoner for many years. The bitterest discussion was on the subject known as "Universalia," the question being in its simplest form: Do general concepts like chair, house, have a separate existence? "Yes," said some and they were called realists. Others said "No, universal concepts have no separate existence, they are -abstractions"—chair does not exist, but a chair exists, a particular chair. The proponents of this doctrine were called nominalists.

The pedantic discussion continued for a long time and is one of the arguments advanced by those who say that the Middle Ages were sterile. But they forget that this type of discussion, this fine-spun argumentation, was not without advantage—it sharpened men's minds and prepared them for the great period we call the Renaissance. But that the method for generations fettered the spirit of inquiry in the universities, especially in the domain of medicine, cannot be disputed.

# IRRADIATION OF THE ENTIRE BODY

(Heublein Method)

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From the Memorial Hospital for Cancer and Allied Diseases, New York, N. Y.

Irradiation with x-rays of the entire human body is not a new procedure. Since the early work of Dessauer, in 1905, and of Wetterer, various roentgenologists have exposed the entire body to x-rays, in small intermittent doses, for various conditions, chiefly skin diseases, leukemia, and Hodgkin's granuloma. The methods have varied, but in general rather brief exposures to roentgen rays, at distances of the order of 1 to 2 meters, have been used. The results of such methods have been favorable in many instances.

Certain theoretical considerations and practical observations led the late Dr. Arthur C. Heublein to form the opinion that to this principle of so-called total irradiation should be added a method of prolonged continuous irradiation with low intensity, short wave lengths, and even distribution throughout the body, in treating those types of neoplastic diseases which tend to spread or metastasize widely. All the above specifications are met in the continuous therapy unit, established with the help of Dr. Heublein at Memorial Hospital in May 1931.

The unit (Fig. 1) consists of a ward containing 4 beds and having an x-ray tube operating at 185 kv and 3 ma. mounted near the ceiling behind one wall, so that two beds are 5.4 meters, the other two beds 7.3 meters from the tube. The filtration is now 2 mm. of copper. The intensity of the radiation reaching the near bed is 17 r per hour, that reaching the far beds is 0.9 r per hour. Taking 750 r as the skin erythema dose for a single exposure to ordinary high-voltage x-rays, the time required to deliver 30 per cent of this dose, or 225 r, to a patient in a far bed of the Heublein unit is 250 hours. Averaging 20 hours of exposure a day (time being taken out for nursing care, examination of patients and one half hour daily visiting period), such a dose would consume a period of 12.5 days. To obtain a more uniform distribution throughout the patients'

bodies, their beds are reversed every 12 hours.

It was the hope of Dr. Heublein that irradiation of the entire body continuously over a comparatively long period might be carried to a point of sufficient dosage to exercise some satisfactory measure of control over widely metastasized tumor processes. He reasoned from some observations of his own, in which considerable sections of the body had been heavily irradiated, that it should be possible to irradiate the entire body without great damage, and hoped that prolonged continuous application of the radiant energy would yield better results. Naturally the idea of subjecting patients to irradiation of the entire body, involving effects upon the entire hematopoietic, endocrine, and other systems, at first encountered considerable scepticism and aroused fears of unknown and unpredictable consequences. After much discussion it was decided, nevertheless to try the experiment, beginning with a very cautious dose and proceeding gradually to larger doses in suitable cases in an attempt to learn the effect of this type of irradiation on various widespread tumor processes with doses which the body could tolerate.

The selection of patients was guided by two main principles. On the one hand cases of generalized radiosensitive malignant tumors were selected, even though they might appear suitable for the usual methods of palliative irradiation. On the other hand, a selection was made of patients bearing widely metastasized radio-resistant tumors, who were still in sufficiently good condition to offer hope of a satisfactory period of observation. The selection of cases was under the control of a special committee on experimental irradiation. Arrangements were made for complete and accurate control of the patients before, during, and after the treatment. In the beginning not only were careful blood and blood platelet counts made,

but a series of determinations was carried out on each patient, consisting of blood calcium, phosphorus, sugar, nonprotein nitrogen,  $\text{CO}_2$ ,  $\text{pH}$ , icterus index, fragility test and basal metabolism. As no significant changes were observed in any of the blood chemistry determinations they were

body of any patient, though it has seemed that an exceptional case might sometime be found for whom a somewhat larger dose might be tried. It seems doubtful, however, that any patient with a generalized malignant tumor will be able to tolerate as much as 100 per cent of an erythema

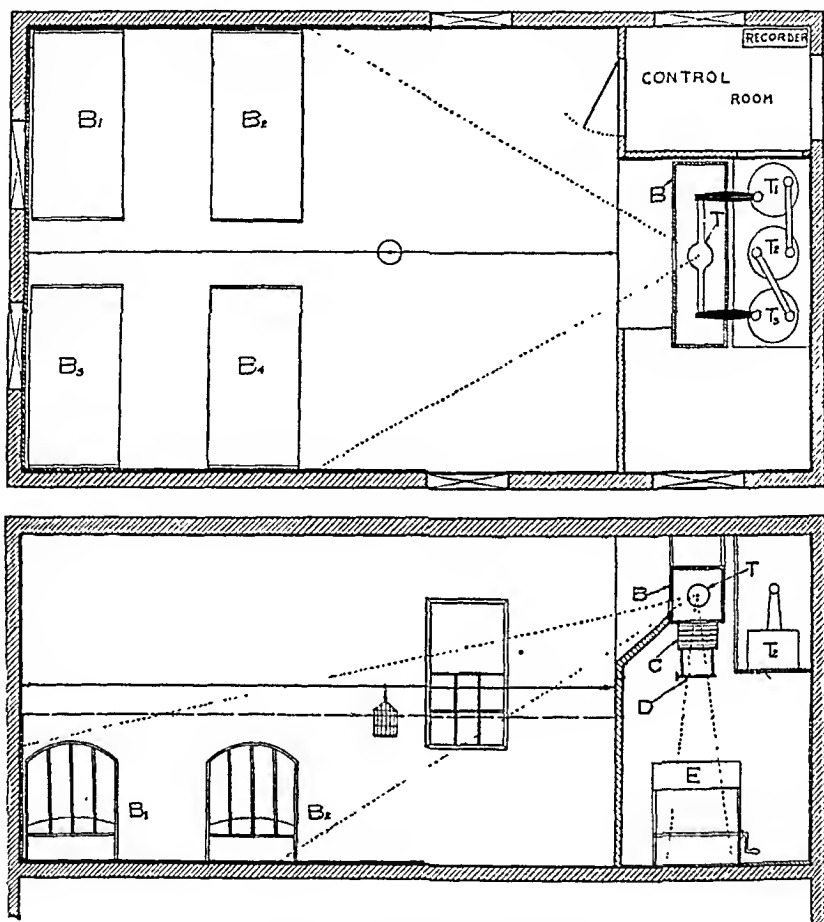


Figure 1.—Floor plan and front elevation of Heublein unit for continuous irradiation of entire body

T = Tube. Beds  $B_2$  and  $B_4$  are 5.4 meters, beds  $B_1$  and  $B_3$  are 7.3 meters from the target. At E is a table directly under the tube, for local irradiation of large fields (maximum portal a circle 27 cm. in diameter) at 150 cm. target-skin distance.

later dispensed with, so that now the main laboratory control consists of blood and blood platelet counts.

The dose used in the beginning was only 5 per cent of an erythema dose. It was found possible as succeeding patients were treated, to increase the dose gradually, keeping in mind always the nature of the disease. Thus, leukemic subjects have invariably been treated with caution. Eventually patients were found for whom doses of 50, and in one case 60, per cent S.E.D. (375 to 450 r) seemed justified. No higher dose has as yet been given to the entire

dose (750 r) over the entire body in one cycle of three weeks.

It is noteworthy that radiation sickness as usually observed with local intensive irradiation is practically absent; nor is there any question of erythema, radio-dermatitis, or alopecia. No consistent effects on the menstrual cycle of women patients have been found, but most of the women treated had either passed the menopause, or they already had amenorrhea as a result of their disease or previous treatment.

The main harmful effect is a decrease in

the white blood cells, which does occur in a large number of the patients, though apparently to no greater degree than is seen in patients who receive large doses by local irradiation. In some there is also a tendency to anemia. These effects are combated when necessary by large whole blood transfusions and in some instances sodium nucleotide has seemed to be of value in counteracting leukopenia.

In the selection of patients, while preferring to choose those who have had no previous irradiation, we have willingly accepted a good many who had been locally

The experience gained over a period of nearly two years, not only in cases treated by this method alone, but even with those patients who also received local irradiation, permits, we believe, certain fairly definite conclusions as to the value of continuous low intensity irradiation of the entire body.

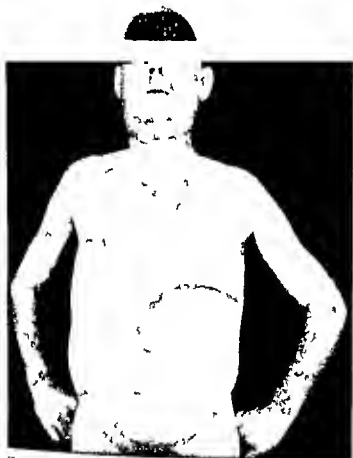


Fig 2—Chronic lymphatic leukemia, October 7, 1932. Note enlargement of spleen and liver, and of the cervical lymph nodes.



Fig 3—Chronic lymphatic leukemia, December 28, 1932. Compare with Fig 2 and note reduction in size of spleen and of cervical lymph nodes. The only treatment was irradiation of the entire body.

irradiated, even extensively, if their condition seemed to warrant a trial of this method, we have not hesitated to employ local irradiation subsequently, or even during the course of general body irradiation in cases in which the best interests of the patient demanded that the obvious benefits to be derived from local therapy be not withheld. Such mixtures of treatment naturally render more difficult the appraisal of the method, but we have preferred to rely upon a more gradual accumulation of experience, depending upon close clinical observation of larger numbers over a longer time than would be necessary had we restricted the treatment of all the selected cases to the method of general irradiation alone.

**RESULTS**—From the latter part of May, 1931, to March 15, 1933, 118 patients

TABLE I—CASES TREATED BY CONTINUOUS IRRADIATION

May 25, 1931 to March 15, 1933

Total number	118
Treated second time	27
Treated third time	7
Local irradiation previously in	67
Local irradiation subsequently in	23

(Table I) were treated by irradiation of the entire body, with doses of from 5 to 60 per cent of a skin erythema dose (including one who received 75 per cent SED to the neck and thorax). Twenty-seven of these patients were treated the second time,

and 7 the third time. The number of patients who had received local irradiation previously was 67, and 23 received local irradiation subsequently. Sixty-two of the patients died. None of these deaths, however, was attributed to the irradiation.

**RADIORESISTANT GROUP.**—In the group having radioresistant tumors (Table II), such as melanoma and mammary carcinoma, there were 24 patients, of whom 23 died. It should be borne in mind that in all cases of radioresistant tumors selected for whole body irradiation the tumors had so widely metastasized that the prognosis appeared utterly hopeless. One patient

temporary palliation had prostatic carcinoma with extensive metastasis to the skeletal system. He received 60 per cent S.E.D.

TABLE III.—RADIORESISTANT GROUP  
*Metastatic Mammary Carcinoma*

Number of patients (dosage 15 to 50 per cent S.E.D.) .....	12
Slightly improved, succumbed later.....	3
Died without improvement.....	9

**RADIOSENSITIVE GROUP.**—In the group having radiosensitive tumors (Table IV), there were 94 patients, of whom 39 died. Of those who died, 9 showed temporary improvement. Of the 55 living patients 44 showed definite improvement as a result of general irradiation and are living 1/3 to 20 months following treatment. Sixteen of those who showed improvement are living over 6 months. Eleven of the living patients are unimproved.

TABLE IV.—RADIOSENSITIVE GROUP\*

Number of patients (dosage 5 to 50 per cent S.E.D., 1 at 75 per cent to part of body).....	94
Improved, living, $\frac{1}{2}$ to 20 months (16 over 6 months) .....	44
Improved, succumbed later, 1 to 13 months.....	9
Unimproved, living, 0 to 20 months.....	11
Died without improvement, 0 to 7 months.....	30

Thus 56 per cent of the patients in the radiosensitive group showed definite improvement and 47 per cent are living and were improved, while in the radioresistant group only 3 patients out of 24 showed slight improvement, and only one patient is living and was improved.

The results in chronic lymphatic leukemia (Table V) have been particularly gratifying. In general our experience with this disease when treated by local irradiation has been less satisfactory, at least much less spectacular than with local irradiation

TABLE V.—LYMPHATIC LEUKEMIA

Number treated (dosage 6 to 30 per cent S.E.D.)..	24
Improved, living, 1 to 20 months (5 over 6 months).....	13
Improved, succumbed later, 13 months.....	1
Unimproved, living, 7 months.....	1
Died without improvement, $\frac{1}{2}$ to 7 months.....	9

of the myeloid form. While our experience in the general irradiation of myeloid leukemia is limited to 5 cases, our impression has been that the response of chronic lymphatic leukemia is better. It has proved advisable to limit the dose for

\* As this work is still in progress, and the results so far are discussed in the sense of palliation, it was felt justifiable to include all cases treated up to the date of the report, March 15, 1933, thus accounting for the short duration of some cases.

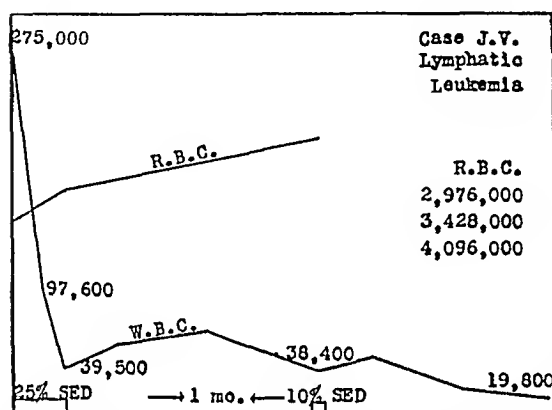


Fig. 4.—Chronic lymphatic leukemia. Graph showing sharp drop in white blood cells and gradual rise in red blood cells following irradiation of entire body. Same patient as in Figs. 2 and 3.

who had an ovarian psammocarcinoma with metastases to the lung and supraclavicular nodes, has shown improvement by this

TABLE II.—RADIORESISTANT GROUP

Number of patients (dosage 6 to 60 per cent S.E.D.) .....	24
Improved, living, 21 months.....	1
Slightly improved, succumbed later.....	4
Died without improvement.....	19

method alone; she is still living, 21 months following the first treatment, two periods of treatment having been given to this patient. Four of those who died seemed to have slight temporary palliation.

As an example of the radioresistant group (Table III) may be selected the cases of mammary carcinoma, 12 in number, receiving doses of from 15 to 50 per cent of a skin erythema dose. All these 12 patients died, only 3 showing slight temporary palliation. The other patient in the radioresistant group who showed slight

leukemias to not over 15 per cent S.E.D. (112.5 r), and preferable to use the far beds, so as to administer this dose more gradually. Up to March 15, 1933, 24 patients with chronic lymphatic leukemia were treated with doses of from 6 to 30 per cent S.E.D. Of these, 13 are living from 1 to 20 months following treatment and showed improvement, a palliative result in 54 per cent. One patient who showed temporary improvement died 13 months after the first of two treatments. One patient, still living seven months following general irradiation, showed no improvement, and 9 died without palliation. Our experience in this group suggests that the failures in some were due to overdosage, in others to the disease being in too late a stage, and that in the future we should be able to better these results considerably in selected cases (Fig. 2, 3, 4, 5, 6).

In Hodgkin's disease (Table VI) we have another considerable group with some striking improvements. Of 33 patients,

TABLE VI.—HODGKIN'S DISEASE

Number treated (dosage 5 to 40 per cent S.E.D.)	
1 at 75 per cent to part of body.....	33
Improved, living, 31 to 12 months.....	19
Improved, succumbed later, 5 and 12 months.....	2
Unimproved, living, 0 to 20 months.....	6
Died without improvement, 1/10 to 6 months.....	6

19 are living  $\frac{1}{4}$  to 12 months following treatment and have shown improvement, and 2 of those who died showed temporary palliation. Six are living but unimproved, while 6 died without improvement.

We recently treated one patient with mycosis fungoides who had a generalized erythematous scaling eruption for 15 years and severe itching for one year. He received a total of 15 per cent S.E.D. (112.5 r). Within 24 hours after he had begun treatment, his itching disappeared, and the rash had faded appreciably by the end of his few days' stay in the unit. In this instance the filtration was left at 2 mm. of copper, since the long duration of the symptoms suggested that he might have beginning visceral lesions.

Multiple myeloma appears to be a disease which may to advantage be treated by this method. Of 6 patients with multiple myeloma 5 showed improvement, although 2 subsequently died. Only one of the 6 died without improvement. The improvement in one of the patients following the first treatment was most striking. This patient was greatly incapacitated by the

disease. She was barely able to get out of bed without assistance and required several minutes to do so. She was given 50 per cent of an erythema dose in one of the near beds. The only local treatment given was 700 r to the dorsal spine, one of the chief sources of her pain. Within 2 months the change in this patient's condition was remarkable. She made long trips by motor, and walked about almost normally. Unfortunately she had a relapse several months later, did not respond well to a second treatment and died about five weeks following the second treatment.

In the more radiosensitive tumors, such as lymphatic leukemia, Hodgkin's disease, and multiple myeloma, it is most gratifying to watch the progress of many of the patients while they are in the ward undergoing the continuous irradiation. Sometimes within one or two days the patients themselves state that they feel distinctly better, and in those with lymphatic leukemia they may even in such a short time observe that their enlarged lymph nodes are beginning to regress. While the improvement in the patient's comfort may perhaps be partly ascribed to complete rest in bed and more individual nursing care, in a small quiet ward, in contrast to the usual ambulatory treatment when local irradiation is used, yet the course as a whole during and after treatment leaves no doubt in the minds of observers that the irradiation itself is bringing about a pronounced change for the better. Such observations, coupled with the fact that the very gradual administration of the dose avoids completely the usual acute toxic effects of irradiation, as well as erythema, and the realization that so much of the disease is being treated which would otherwise be missed, make one feel that for some diseases this method is an approach to the ideal therapy.

Yet certain disadvantages must be recognized.

(1) Because of lack of experience with this method it is always a difficult and highly individualized problem to decide what dose to administer to any given patient. We feel that we overdosed some of our leukemics, and believe now that no patient with leukemia should receive over 15 per cent (112.5 r) in one treatment cycle, lasting 6 or 7 days, and that perhaps even this figure is too high.

(2) In some diseases, even the relatively radiosensitive ones, it is probable that the patient will not tolerate irradiation of the entire body in a dose sufficiently great to have the necessary controlling effect on the local lesions. However, we believe that in many cases it may be of advantage to give what is estimated to be a safe dose of general irradiation, and then if necessary use local irradiation, in smaller doses than usual, for such lesions as are troublesome symptomatically or disturbing to the patient because of their con-

would be safe. This hesitancy to use larger doses is partly due to the fact that in the past eight months we practically gave up attempting to treat radioresistant processes such as widely metastasized mammary carcinoma, although we hope that perhaps some exceptional case may yet come along in which we shall feel justified in attempting to push the dose a bit higher.

(3) A rather well-marked leukopenia has occurred in some cases, sometimes associated with considerable lassitude and weakness.



Fig 5—Lymphatic pseudoleukemia, before treatment, November 1931. Compare with Figure 6.



Fig 6—Lymphatic pseudoleukemia, following treatment, July 1932. Compare with Figure 5

spicuousness. As evidence of the limitations of the dose may be mentioned the fact that the highest dose given to any patient (60 per cent S.E.D.—450 r—in a period of 3 weeks) was given over a year ago. This was in a case of metastatic carcinoma of the prostate. There was slight temporary palliation following the treatment. Although in this case we could see no evidence of harmful effect of this dose we have not subsequently encountered any patient for whom we felt a greater dose

(4) Especially in leukemia there is a tendency to a fall in the number of platelets in the peripheral blood and occasionally we have seen some evidence of appearance of a hemorrhagic diathesis. As is well known in connection with local irradiation of leukemic subjects, caution in dosage is obligatory.

In regard to the future of this method of therapy several possible modifications may be suggested:

(1) A modification which we have tried



in one case and hope to try in others is to use the same type of prolonged continuous irradiation for large sections of the body, shielding the rest of the body. This method would be applicable to cases like the one treated. Hodgkin's disease with extensive intrathoracic involvement, cervical and axillary lymphadenopathy, without definite involvement elsewhere, or, for example, cases of abdominal metastases of testicular teratoma, or it might be used more experimentally in selected cases to treat one-half or one part of the lesions, leaving the others untreated. With such sectional irradiation it should be possible to give larger doses with less danger of leukopenia or other undesirable effects of irradiation than would be expected were the entire body treated. We gave our patient with Hodgkin's disease 75 per cent SED (562.5 r, see Fig. 10).

(2) Following local irradiation, as in Hodgkin's disease, we have lately given many patients, even though no marked evidence of disease was present, a small dose (10 per cent SED) to the entire body, hoping to exercise a beneficial effect mainly on latent foci of the disease which presumably might exist in areas that had not been treated. We have been impressed by the fact that several of the patients so treated have noted a well-marked "tonic" effect soon after such treatment. Undoubtedly, the rest in bed for 4 or 5 days contributes to that effect.

(3) By removing the filter of 2 mm of copper, or by inserting in its place 1 or 2 mm of aluminum, it might be possible to secure better results in the treatment of

certain diseases manifested chiefly on the surface, such as leukemia cutis, the cutaneous lesions of Hodgkin's disease, and mycosis fungoides.

#### SUMMARY

(1) A new method of total irradiation is described, the essential difference from previously used methods consisting of the continuous low intensity application of the rays over periods of days to weeks with long target-skin distances.

(2) The results of this method, as tested in 118 cases, indicate that it may be a valuable adjunct to the treatment of several radiosensitive processes such as the lymphomas, leukemias, and multiple myeloma, that it may yield superior results in some cases of lymphatic leukemia, but that it may have little value in radio-resistant processes.

(3) Certain disadvantages of the method are discussed, such as the difficulty of selection of proper dosage, the failure to bring about adequate regression of some local lesions, and the development of leukopenia and thrombocytopenia in some cases.

(4) Various modifications of the method are suggested: the treatment of large sections of the body by continuous low intensity irradiation, its use in small dosage for the treatment of presumable latent foci of radiosensitive processes, following or preceding local irradiation, and the use of prolonged long distance unfiltered or lightly filtered radiation for certain cutaneous diseases.

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### THIS AND THAT

The rough and ready methods of our grand fathers are illustrated by the fact, related by Dr. Howard Haggard, that in those days a scab was plucked from the arm of the vaccinated patient and carried in the pocket of the physician until needed. He then pared off a portion, no doubt, with his pocket knife, and in a scratch on the arm of his patient made with the point of this same useful knife, placed the paring! This was rugged simplicity," Dr. Haggard remarks, but it rouses a feeling, not of admiration, but horror.

The Wayne County (Michigan) Medical Society has secured as its headquarters a fine old mansion built 30 or 40 years ago in Detroit, but hard to let or sell just now. It pays

one dollar a year rent. As the society is a nonprofit organization, the estate makes a large saving in taxes, and so can afford to give the society these advantageous terms.

A bill introduced at Albany would make it unlawful to give a false call for a physician or hospital.

All medical diplomas issued in the future by the University of Sydney, Australia, will bear not only the signatures of the graduates, but also both thumb prints, for purposes of identification. The same practice is followed in the case of all medical diplomas issued in the neighboring state of South Australia.

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## EDITORIALS

### A Look at Pending Legislation

Our Society is concerned with the public welfare, as well as with the interests of the profession. Our solicitude is natural, therefore, when contemplated legislation affects either. We will not review all pending legislation, but rather comment on a few bills before our legislators with a view to clarifying our stand upon them.

We are wont to divide bills introduced into the Legislature into characterizing categories. We find groups of bills typifying efforts to obviate compulsory vaccination. Another group of proposed enactments would hamper and hinder medical progress and prevent the orderly course of scientific development and study, by prohibiting vivisection. Bills are introduced in the interest of technicians in various branches of medicine, chafing under the restrictions of the Medical Practice law. They are seeking the introduction of licensing bills which would give them an independent status in the State. Such legislation is unnecessary and harmful. It is based on a desire to evade the law rather than enforce it, and encourages encroachment on the legitimate domain of medicine. Additionally, we find

a group of bills whose intent is to permit irregular "cults" and "specialisms" to engage in their respective pseudomedical practices under the shadow of enacted law—all of which are attempts to weaken the Medical Practice Act.

Needless to state our opposition to all such measures is in the interest of the public welfare and the maintenance of good health among the people.

Occasionally we are confronted with proposed legislation which is both foolish and wasteful. Such is that proposed by Assemblyman Cohen. Although two thorough investigations into the workings of the Workmen's Compensation Act have been completed recently, this Assemblyman would have the State spend \$15,000 of the taxpayers' money on a third survey. And Senator Byrne proposes to set up a Bureau of Industrial Rehabilitation in the Department of Labor. Such a bureau will place the State in the practice of medicine, in direct competition with private practice, to the ruin of the latter. It is indeed hard to find grounds for either of these bills now pending in the Legislature. They should be opposed with a vigor warranted by their viciousness. Let it be known, that there will be no satisfactory solution of the medical problems associated with the Workmen's Compensation Act until the responsibility for that branch of healing is placed where it belongs—with the organized medical profession. A competent investigating committee has formulated sound and practicable recommendations. Instead of toying with proposals that are subversive of our entire system of medical practice, our legislators should be told to turn their attention to the recommendations made by the Governor's Committee of Physicians.

A bill has been introduced into the State Senate which gives the hospitals a claim upon damages awarded in negligence actions, but makes no provision for the physicians and nurses. This is a manifestly unfair attempt to protect the hospitals at the expense of their medical staffs. It is hoped that the hospital authorities will cease supporting the McNaboe-Condon bill. Hospitals, doctors, and

nurses should rally behind the bill sponsored by Assemblyman Cornaire. His bill recognizes their just rights to payment for joint services.

The O'Brien-Garnjost bill permits the establishment of a group payment plan for the hospitalization of semiprivate patients in voluntary and public institutions. Like the schemes approved in the Booth Report and adopted by the House of Delegates at its last session, this bill allows the free choice of physicians, and leaves intact the financial relations between doctor and patient. Unlike the principles advocated in the Booth Report, however, it organizes the participating groups along *industrial* lines, and places upon employers the responsibility of collecting the insurance fee. This is not the only difference. In the principles embodied in the Booth Report, the United Hospital Fund of New York City working in collaboration with the organized profession in the Metropolitan District, worked out and enunciated basic principles underlying a hospitalization payment plan. These principles were so construed, that it was a prerequisite of their adoption by the profession, that all the hospitals (private, voluntary, and public) in any given community must *all* be in the scheme, to make it applicable at all. This provision was made to guard against one hospital going into competition with another, in the same community; and the patients who were to be provided for, by the service furnished under the hospitalization payment plan, were to be within a certain specified wage-earning group, below the so-called "comfort level" of the community. Additional factors entered into the proposals which finally brought the representatives of the United Hospital Fund, and the organized profession to common ground the details of which are not germane to this discussion.

The O'Brien-Garnjost bill in its present form, lacks the desired safeguards, and it is therefore no contradiction of decisions, that the State Society which approved the recommendations of the Booth Report shall seriously consider all the implications and

possible effects of this bill entirely upon its inherent merits.

The English contributory schemes are managed by the hospitals themselves. The participants subscribe in their individual capacity, and not as a member of a particular industrial group.

The Committee on the Cost of Medical Care recommends voluntary health insurance as a precursor of the compulsory variety. The industrial organization contemplated by the O'Brien-Garnjost bill, could easily serve as an entering wedge for obligatory hospital insurance. Voluntary group provision for hospitalization is undoubtedly desirable, but the scheme adopted should permit no suspicion that it is a disguised forerunner of compulsory health insurance.

### Calling Uncle Sam to the Rescue

When the farmers are in distress, they appeal to Uncle Sam and he loans them millions on farm mortgages; when home owners are hard up, Uncle Sam releases a shower of funds; banks, railroads, businesses of every description are being carried along financially by the kindly Samuel in order to avoid a general crash that would land us all in chaos. By the time the slump is over some think that our munificent uncle will have a lieu on everything in the country, and, as the government belongs to the people, our property will belong to us, only it will be by mortgage instead of by direct ownership.

It now appears, however, that, by some oversight, the doctors have been left out of this magic shower of funds distributed to all and sundry. Why isn't a doctor just as good (for a loan) as a farmer, banker, veteran, railroad president, or what you will? Millions and billions are flowing from the United States Treasury in a life-giving stream that makes the classic fertilizing floods of the Nile look like a trickle. Now is the time to get part of it.

The idea behind the suggestion, however, is founded on sound business sense. It emanates from the Lawyers Club of Los Angeles and so naturally has six "whereases" a "be it resolved" and a "be it further resolved." In spite of which

it can be boiled down to the proposition that the clients and patients of lawyers and doctors sign long-term credits for their bills and that a Federal agency discount these at a low interest rate and release the cash to the distressed men of the law and medicine. Medical bodies are asked to endorse the plan and send resolutions to their Senators and Representatives in Congress.

The soundness of the scheme appears at once when we recall that there are well-established concerns both in Los Angeles and New York, and no doubt elsewhere, which are already performing this identical service for lawyers and doctors, so that the U. S. Treasury would not be doing anything untried or experimental. The usual plan is to have the client or patient sign very much the same sort of time-payment paper as he gives for his motor car: then the finance company takes the paper and gives the lawyer or doctor the cash. Hundreds of radios, refrigerators, washing machines, and what-not are sold every day in this manner.

There is a real opportunity here, say the Los Angeles promoters of the movement, to give some quick relief without departing too far from sound financial principles.

### Kentucky's Gallant Fight

A terrific set-back has been experienced by the State health authorities in Kentucky in their gallant fight with disease and death. The whole country knows the story of the county nurses who climb the stony mountain paths on horseback to bring new health and hope to the tiny cabins perched among the crags. The hardy Kentucky mountaineers, descended from the men of Daniel Boone, and of the same blood as Abraham Lincoln, are being ravaged by tuberculosis, diphtheria, hookworm, syphilis, and a score of other diseases that yield to the magic touch of modern medicine.

But in the midst of the noble efforts of doctors and nurses to clean up this bad situation, all financial aid from the U.S. Public Health Service was discontinued on June 30, last. Then the Reconstruction Finance Corporation, acting through

the Kentucky Relief Commission, extended enough aid to continue the work, but on December 1 this assistance, too, was completely and somewhat abruptly terminated, leaving approximately fifty counties either without any public health nursing services at all, or with such services so reduced as to be altogether inadequate for meeting the many problems growing out of a depression so severe as to demand a nationwide set-up for relief. The Kentucky State Board of Health, which reports these facts, says that "no more distressing circumstance has ever developed in connection with public health work in the state; it means a set-back for county health work which many years will be required fully to counteract." Federal aid had been given for seven years; the work had come to rely and depend on it, and the loss of it now "creates a situation as embarrassing as it is deplorable."

How deplorable the conditions are in the blue-grass State is revealed in the stories of the devoted public-health workers. They seem almost past belief in our great rich America. Take McLean County. Thirty per cent of the families are receiving relief. Underweight children in the schools have increased 46 per cent since 1929. The parents of the families on relief have "no money, no jobs, no visible means of support, and insufficient food. Many children and parents, too, are half-fed, almost naked. Many children have rickets, some grown people have pellagra."

Some of the mountain schools visited by the public-health workers seem to belong to the dark ages. In Leslie County, in eastern Kentucky, among the mountains, many of the schools are from 20 to 30 miles from the county seat and can be reached only on horseback. The school buildings are deplorably primitive, sanitary conditions are terrible, the roofs leak, the windows are "shot out," the desks and benches are rough boards, and the stove is the only "brought on" article in the building. Often, in fact, there is no stove. Not infrequently the health worker finds the school closed and the teacher gone fishing or squirrel hunting. The effect of unsanitary conditions on the children's health

need not be explained to the reader of these papers. Few of the schools in Leslie County have sanitary toilet facilities. Most of them have none at all. As a consequence, practically every school child has hook-worms or other intestinal worms. Sanitation "is urgently needed over the entire county." Yet this is the time when the withdrawal of federal aid brings the work to a halt.

Fathers and mothers in the back districts are often cold or hostile to the new-fangled health ideas. It is the children who break down all opposition. One woman who came with her twins to a health conference in Powell County said; "I don't bring my twins; they bring me." Every child is eager for the "blue ribbon," awarded to those who have had all defects corrected, so they give their parents no rest till their eyes and teeth are attended to and they are immunized against small-pox, diphtheria, etc. The "blue ribbon" program is given each May Day. Many parents have said to the county health staff: "I am broke now, and it's your fault; for my children needed their teeth corrected to get blue ribbons. They kept worrying me until I had to have it done." The local dentists say the health department is working them to death. Families are also learning what Grade A milk is, and many undernourished children have gained 10 to 12 lbs in the past year.

Ignorant midwives, or "grannies," have been unwittingly responsible for disease and death among mothers and children, but the glad news of better maternity care is spreading like a new gospel through the hills. In the beginning the nurse had to seek out expectant mothers and ask them to come to the clinic, but the word has passed from cabin to cabin and from valley to valley until last year fully half the women who came to the prenatal clinics in Anderson County were previously unknown to the health department. One midwife, 74 years old, walked four miles to the Edmondson County clinic, bringing four "prenatals." The infant mortality among babies whose mothers did not attend the clinics is much higher, and the news of this fact soon goes around.

Sometimes a mother who cannot come borrows the book of instructions from a mother who came. She proudly says she raised her baby "by the book," and such babies are always up to normal standards in every respect, we are assured. "Healthy Baby Contests" rouse enormous interest. The judges are physicians from outside the county, perhaps as a safety-first precaution.

The difficulties are formidable. No roads exist in some sections, and many towns in Rowan County are isolated the year round. Others are isolated from September to May. It seems that in "this semi-mountainous district, nine-tenths of the people speak a language peculiar to parts of Kentucky, Virginia, and Tennessee. Many social lags, old customs, peculiar religious beliefs and health cults are to be found." We are told that one boy who had to be "'beaten' every day and then 'didn't seem to learn nuthin,' was found to have such poor vision that he could not see one's five fingers at a distance of five feet. The health department is attempting to correct such conditions, but, unfortunately, many of the parents are poor and ignorant and insist that they can 'whup' enough to make good citizens of the worst handicapped."

One day the health department of Lincoln County was asked to look in on a school to "see about a breaking out" which the children had. The worker found that 25 per cent of the school were at home ill and the remaining 75 per cent had either previously had scarlet fever or were undergoing the various stages while still attending school. The community received such full instructions on the subject that such a situation cannot happen again. Meantime, diphtheria had also appeared, and 1,263 children received immunization.

And so the story could go on and on, but enough has been told to show, perhaps, that health work is fully as important as some other things the public money is being poured into. It is to be hoped that we may hear soon that Kentucky's health workers are again on their beneficent rounds.

### Doctors' Telephone Refunds

Excellent results have followed the brief paragraph in our issue of February 1 informing our readers that doctors are entitled to the lower residential rate on their telephones when their offices are located in their residences. Since the item appeared, our business management has received more than 50 telephone calls, letters and other inquiries in regard to it. We have secured a nine-year credit refund for one doctor, a seven-year credit refund for another, not to mention smaller adjustments. The ruling of the New York State Public Service Commission is that the residential rate, rather than the higher business rate, shall apply on the telephone of a physician, surgeon, osteopath, chiropodist, optometrist, chiropractor, Christian science practitioner, veterinary surgeon, nurse or physiotherapist, when the office is in the subscriber's residence. We feel that it is a privilege to perform services of this nature for the physicians of the State, and we shall be more than pleased to aid in any other problems where our friends may wish advice or assistance.

### The Race of Stork and Reaper

One of the classic stories handed down from generation to generation in the newspaper offices has it that a young headline writer, editing a report on birth and death rates, wrote the caption: "Stork Shades Grim Reaper." What would he write over the annual report of life, death, and disease in 1933 for New York State, bristling as it is with superlatives in every direction you may look?

The poor stork presents a sorry appearance, with the birth rate the lowest ever recorded. The number of births last year was nearly 13,000 less than in 1932. The old saying that births increase after a great war is shot to pieces. The state birth rate in 1914 was 24.6 per 1,000 population, the highest ever known. Last year it was 14.0, the lowest ever recorded. In six years it has dropped more than 25 per cent. The windows of the bird stores are filled with various preparations guaranteed to give the birds more pep and vigor—some kind-

hearted person might well send a box of it to the winged messenger whose wings appear to be growing a bit weary.

To make up in some part for the falling birth rate, we learn that the rate of infant mortality, 54 deaths under one year per 1,000 live births, was practically equal to the minimum recorded in 1932.

But if our old friend the stork is lagging in his task, our old enemy with his sickle keen is also slowing up. The death rate last year dropped to the lowest point ever known in the State. The editor of Health News, organ of the State Department of Health, remarks that the significance of this fact is likely to be misunderstood or misinterpreted. Some superficial, perhaps rather callous, observers see here a beneficial effect of economic deprivation. This, of course, is not true, he says. Surveys are now being made to discover the cause and we shall know the real reason when the reports are in.

When we come to examine the mortality reports in more detail we find some encouraging features that may well cheer the profession that is waging a never-ending battle with death and disease. The pneumonia death rate, 91.2 per 100,000 population, has never been lower, and, in fact, rates below 100 were recorded only twice before, in 1921 and in 1932. The death rate from diphtheria, 1.1, was about half the previous minimum of 2.1 registered in 1932. The rate from whooping cough, 2.2, was never lower.

Turning to the darker side of the picture, the Health News tells us that the disquieting rise in maternal mortality, first noted in 1930, is still going up, and the 1933 rate of 60 deaths per 10,000 live births was the highest in 15 years. The increase over 1932, it seems, was due entirely to a rise in the mortality from puerperal sepsis, a fact which should carry its lesson to those who are working earnestly on this vital problem.

The death rate from cancer, 127.5, also rose to a new maximum, and the rate from diabetes, 30.3, set a new high.

The State health report is like the battle bulletins issued during the great war, telling of a mile gained here, a mile lost

there, positions taken, lost and stormed again, thousands killed, wounded, or captured from the enemy. And meantime the war goes on, in the little hamlet in the hills, in the smoking factory town, in the homes of the rich and the tenements of the poor, up and down the city streets. Already the records of 1933 are months behind us, and we are making the figures for 1934. One of the great battles of the Crimean War was called "the soldiers' battle" because the men took the conflict into their own hands and fought it to a victory. That is the kind of battle the physicians are waging. It is a hand-to-hand fight, and they are capturing more and more enemy territory every year and every day.

The cost of public medical service in New York City, not counting the free service of private institutions 'has in the last twenty or thirty years doubled and trebled itself' said ex Mayor McKee in his address at the Academy of Medicine. "Slowly but surely," he declared the government is assuming more and more the work of the private physician."

A cheerful view of the increase of deaths from heart disease in older age brackets is taken by Dr. Donale B. Armstrong, third vice president of the Metropolitan Life Insurance Company. There is something to be said," he observes in *American Medicine* "from the point of view of man's comfort, in favor of gradual increase of sudden cardiac deaths on the gold course and elsewhere from coronary disease, to the extent to which this method of terminating life eliminates long periods of decline and invalidism. Looking at the problem from this angle, may we not even be justified in referring to that type of heart disease in the terms which Osler applied to pneumonia, namely, 'A friend of the aged!'"

Doctors distracted by worries in these troublous times may welcome the advice of a fellow-practitioner in Mississippi, who gives his prescription in a letter to his medical journal. "If you want to forget all your troubles," he writes, "get up a jolly good crowd of men a good pack of deer dogs and go hunting, nothing so exciting as for a big buck to almost run over you. Mims Mitchell, our efficient funeral director and myself have just gotten off of a fine hunt. Bagged four deer."

A connection between the Ford car and the reduction of mortality of gastric cancer is found by the alert editor of the *New England Journal of Medicine*. Early x ray examinations are essential he remarks and "everyone knows the reason why a gastro intestinal x ray is avoided. It is because one wishes to save the patient money. And the remedy? Increase the number of x rays, reduce the cost and ask the originator of the Ford car how it can be done."

## Correspondence

*Anonymous letters will not be noticed. All communications must carry full name, and address of the writer but these are omitted on request.*

### To the Editor

From among the many excellent things in the last issue of the JOURNAL I want to pick out your editorial 'Making the Public too Health conscious' and say 'Allah be praised for it.' For many a long day I have ranted in my feeble way along these same lines and now you come along and put something in print so much better than I could say it—it fills me with joy.

Damn most of this health education. I do not remember seeing a single patient who has come sooner because of this education but I have seen innumerable women who are going to their graves obsessed with the idea that they have cancer and the Lord Almighty could not make them believe otherwise.

All of the editorials are excellent but the one mentioned is outstanding. I wish that you would put it out as a pamphlet so that I could distribute it to a lot of morose damn fools.

WARREN L. DUFFIELD

### To the Editor

Page 127 February 1st Review by John F. Jennings on what everyone should know about cancer.

My regards and admiration to Dr. Jennings—honest and fearless.

JOHN F. WHITE, M.D.

### To the Editor

I read to-day your editorial on the subject of Sterilization. There was in Sunday's New York Times in the Magazine Section by Sanford Bates a concise well stated article on The Prison. I saw also in the Times one day last week resolutions passed by the Women of Savannah Georgia and handed to the Mayor the Board of Aldermen of that City commending the practice of sterilization upon the unfit.

Kindly advise me regarding what 27 states as you state now legally permit this surgical procedure.

In addition to its practice upon the unfit I am interested concerning its employment as a crime deterrent, and want to be informed where I can find information leading in this direction. What can you tell me? Is anything being done abroad in combating crime by this method?

DR. HENRY H. COVELL

[Twenty six states have sterilization laws. North Carolina was the twenty seventh but its law has been declared unconstitutional by the State Supreme Court. The twenty six are Maine New Hampshire Vermont Connecticut Delaware Virginia West Virginia Alabama Mississippi Michigan Indiana Wisconsin Minnesota Iowa North Dakota South Dakota Nebraska Kansas Oklahoma Montana Idaho Utah, Arizona, Washington Oregon and California.]

# Society News

## Legislative Bureau

*Bulletin No. 7, February 24, 1934*

### ACTION ON BILLS

SENATE BILL INT. No. 385—Wicks, unemployment relief funds, passed by the Senate.

SENATE BILL INT. No. 297—D. T. O'Brien—Assembly Bill Int. No. 324—Garnjost, hospital service plans exempted, passed Senate and reported out in the Assembly.

SENATE BILL INT. No. 568—Esquirol—Assembly Bill Int. No. 695—V. C. Lewis, tuberculosis hospitals control, amended by requiring superintendent of hospital to be "licensed or eligible for licensure in New York State."

SENATE BILL INT. No. 566—Berg, professions entrance requirements, third reading.

Assembly Bill Int. No. 353—Hamerman, health law domestic servants amended to exempt persons with infectious diseases while in quiescent state.

### HEARINGS

February 27—All bills in Labor and Industry before the joint committee.

February 28—Breen Antivivisection at one p.m.

March 6—Two Pharmacy bills, Assembly Int. No. 415, Assembly Int. No. 417, Dunkel.

March 13, 14—Two per cent sales tax bill, Fearon.

On Tuesday, February 20, the Assembly Committee on Education heard representatives of the Osteopathic Society, the Assistant Commissioner of Higher Education of the Department of Education and Dr. Lawrence on the merits of the osteopathy bill. The committee has not taken action on the bill but we believe the osteopaths did not strengthen their position of last year by any new arguments. It was stated that the Regents had voted not to support the bill this year.

### NEW BILLS INTRODUCED

SENATE INT. No. 758—Wicks—Assembly Int. No. 1012—Bentley, offers amendment to the General Municipal Law, by authorizing supervisors of county without purchasing agent or auditing commission to make appropriation for maintenance expenses of public general hospital. Referred to Cities Committee.

Comment.—A copy of this bill will be mailed early next week. It needs careful study, for one part of it seems to give the financial control to the board of supervisors in such counties where no purchasing agent or auditing commission exists. There is a question in our mind as to whether it is wise to give the board of supervisors such control or whether it should not rather rest with the board of managers.

SENATE INT. No. 890—Buckley, would amend the Civil Practice Act by providing for the appointment by the court of one or more expert witnesses whenever expert evidence is required. Referred to the Codes Committee.

SENATE INT. No. 903—Lord—Assembly Int. No. 1110—Deyo, adds new section to the Public Health Law, prohibiting sanitary regulations and sanitary code amendments limiting sale of milk or cream obtained from cows suffering from Bang abortion disease until provision is made for disposing of such cattle and for payment of indemnity. Referred to the Health Committee.

ASSEMBLY INT. No. 1143—Murphy, offers the following amendment to the Civil Practice Act: for preference of action brought by person injured in course of employment and entitled to workmen's compensation and who elects to sue third party. Referred to Codes Committee.

ASSEMBLY INT. No. 1144—Murphy, adds new section to Workmen's Compensation Law, for procuring special medical services for claimants with controverted claims, who are unable because of poverty to secure necessary examinations or other medical evidence. Referred to Labor Committee.

ASSEMBLY INT. No. 1145—Murphy, adds new subdivision to section 15, Workmen's Compensation Law, for reopening of claim where claimant requires further medical treatment or his condition has changed or schedule loss has increased over allowed percentage. Referred to Labor Committee.

To those of you who are not chairmen of County Society Legislative Committees, you will find a copy of the white book inclosed. We are sorry we are so late in supplying this information but it is due to the fact that both chambers of the Legislature were unusually late this year in effecting a permanent organization. Again let us call your attention to the necessity of filing with your legislators your approval or disapproval of the following bills:

### APPROVED

SENATE INT. No. 66; Assembly Int. No. 296: Hospital lien bill, including physicians.

ASSEMBLY INT. No. 289: Free choice of physician.

### DISAPPROVED

SENATE INT. No. 45; Assembly Int. Nos. 141, 169, 570, 728: Occupational disease bills.

SENATE INT. No. 235; Assembly Int. No. 419: Labor clinics.

SENATE INT. No. 336: Antivaccination bill.

SENATE INT. No. 450; Assembly Int. No. 715: Osteopathy bill.

SENATE INT. No. 505: Physiotherapy bill.

ASSEMBLY INT. No. 364: Antivivisection bill.

*Bulletin No. 8, March 2, 1934*

### ACTION ON BILLS

SENATE INT. No. 297—O'Brien, hospital service plans exempted, has been substituted in the



Assembly for Assembly Int No 324—Ginnost, and advanced to third reading, but referred to committee for amendment

SENATE INT No 566—Burg, entrance regulations to professions, has passed the Senate and been referred to the Education Committee in the Assembly

ASSEMBLY INT No 215—F M Smith, milk fat tests, reported out in the Assembly

ASSEMBLY INT No 1012—Bentley, amending the Municipal Law with regard to county hospitals, passed the Assembly and referred to Committee on Cities in the Senate

#### HEARINGS

March 6 at 2 P M—Pharmacy bills, Assembly Int No 415, Assembly Int. No 417—Dunkel

March 13 to 14, two per cent sales tax bill—Pearson Wadsworth

On Tuesday, February 27, there was a hearing before the Joint Committees on Labor and Industry on all bills that have been referred to those two committees. In previous years this hearing has drawn large crowds and stimulated very exciting debates, but this year's hearing was an exceptional one in these two respects, first, there weren't so many people present and, second, only two bills occasioned much debate. They are the bill limiting the hours of work of state employees to eight and another regulating the conduct of public employment agencies. Of course, many of the bills that were scheduled for the hearing have been debated in previous years, and at the suggestion of the secretary of Federated Labor, we all agreed to file with the two committees briefs conveying our points of view on those bills that we did not agree upon at the time of the hearing. This probably will prove a more satisfactory way for the committees to know how our various organizations feel toward certain bills than to have them discussed, because so many people have very poor terminal facilities when they get upon their feet and others find it very difficult to say what they have in their minds and muddle it up considerably. Prior to the hearing we had filed with every member of the two committees our reactions to the bills that were before them, and we have begun to discuss with members of the committees those bills that are most debatable.

On Wednesday, the 28th, we had the annual hearing on the antivivisection bill. In opposition to the bill Dr Morton introduced the following: Drs Peyton Rouse, C P Rhoads, and Florence R Sabin, of Rockefeller Institute, James W Jobling, Professor of Pathology at Columbia University, John Wyckoff, Dean of Bellevue Medical School, Frederic C Sondern, representing the Academy of Medicine, George Whipple, Dean of the University of Rochester Medical School, G Canby Robinson, Dean of Cornell Medical School, Barbara B Stimson, Assistant Surgeon at Presbyterian Hospital, Walter L. Matlack, of the State Institute for the Study of Malignant Disease also Dr A B Wadsworth of the State Laboratory and Dr Harold Kypins of the State Department of Education. Those appearing for the bill were some of those who have appeared regularly. Dr Murphy, who is now an Assemblyman, cross-examined most of those who spoke in opposition to the bill and spoke in favor of it himself,

pleading with the committee to report the bill out so that a vote might be taken on it on the floor. (Dr) Benedict Lust, who said he conducts a school on naturopathy in New York City, spoke in favor of the bill. The proponents of the bill gave no more specific reason for the amendment than was given in previous years and the bill will likely receive the same fate.

#### NEW BILLS INTRODUCED

SENATE INT No 926—Feld would amend the General Corporation Law by prohibiting a corporation from using the word Doctor or the abbreviation Dr as a part of its name. Referred to the Judiciary Committee.

There is a great need for this amendment. It originated with the Department of Education and we are sure that you are ready to support it.

SENATE INT No 949—Byrne, appropriates \$20,000 to increase supervisory services in State Education Department to develop more satisfactory preventive and corrective physical education and recreation programs for children and adults. Referred to the Finance Committee.

SENATE INT No 954—Esquirol, Assembly Int. No 1288—V C Lewis amends the Public Health Law by empowering Public Health Council to prescribe qualifications for appointment after December 31, 1934, of dairy and milk inspectors and operators of public sewage treatment plants and public water treatment and purification plants. Referred to the Health Committee.

ASSEMBLY INT No 1304—Stewart, amends the Education Law for supervision of clinical laboratories by persons licensed to practice medicine. Referred to the Education Committee.

This bill adds two new sections to the section on definitions of the Medical Practice Act, namely, a definition of 'laboratory' and of 'clinical laboratory' and then adds to the section on penalties a section which would make one who is not a licensed practitioner of medicine guilty of a misdemeanor if he conducted, directed, supervised, or controlled the work or reports of a clinical laboratory, and a clinical laboratory is defined as a building or room where tests are made on individual persons, their secretions, excretions, blood and tissues to aid in the diagnosis, prognosis, or treatment of the individual's physical or mental state or states.

ASSEMBLY INT No 1357—Strett, adds new section to the Penal Law making it a felony for any physician wilfully and unnecessarily to change characteristic finger markings of a person's fingers or thumb by operation or otherwise. Referred to the Codes Committee.

We are working hard to advance the Byrne Cornaire hospital lien bill. We have asked all of the general hospitals in the State to submit us a statement of the amount of money they failed to collect for services rendered cases of personal injury in either the month of June or July. Probably less than 50 per cent of the hospitals have replied as yet, but some of these show amazing losses. We are certain that the members of the Judiciary Committees will be impressed by the great sacrifice that hospitals, physicians and nurses are called upon to make. We are pressing the point with the committees.

that compensation for these services is not necessarily a responsibility of the individual who was injured, but rather of the insurance company that carried his insurance, and following that lead we accuse the insurance companies of being highly unfair in opposing the advancement of the bill.

The hospital, physician, and nurse called upon to take care of the injured individual have no opportunity to seek instruction from the insurance company, but it would not be asking too much to expect the insurance company when it is notified of the accident, to communicate with the hospital, physician, and nurse, authorizing their services in the care of this patient, who in his present condition is an immediate liability to them; on the contrary, insurance companies usually say nothing but wait for the patient to leave the hospital and then attempt a settlement with him. The argument which they bring forth at the present time is that it would be necessary for them to secure releases from so many physicians and nurses that it would make a settlement almost impossible. If, however, the insurance companies were to take an interest in the patient immediately that they receive the first notice of his injury, there would be no physicians or nurses on the case that the insurance companies would not know about, and when the time for settling the case came, releases could be gotten as promptly from them as from the hospital. It should be remembered, too, that certain insurance companies issue policies at the present time making special provisions of a specified amount to be paid the hospital for emergency care it may render; also a stated amount to be paid the surgeon if surgical services are needed. So far as our information goes, it is an exceedingly rare occasion when an insurance company notifies the hospital that an injured man carries a policy with these conditions; on the contrary, such injured persons are allowed to leave the hospital without making any payment whatever, regardless of the fact that the policy which the patient carried specifically made those provisions. The injured person cannot be held entirely responsible for this because many men do not know the full provisions of their policies and when they are taken to the hospital may or may not be conscious; at any rate, they are most likely not to be in such condition as to be able to take care of their affairs and that is the reason they carry the insurance policies.

We hope that your enthusiasm will mount with ours in supporting this bill. Can you not ask your hospitals to have the proper person interviewed by your local newspapers upon the matter? Also call upon your legislators who are home over the week-end and press the matter with them. We have had some very encouraging interviews with legislators. Several of the leaders have told us that they are sympathetic to the bill and will vote for it. The strong opponents to the bill are the insurance carriers and we believe that they can only op-

pose it so long as the public remains ignorant of the true state of affairs.

*It is tremendously important that you immediately give this bill and your support of it as much publicity as you can.*

### Special Bulletin

March 7, 1934.

Yesterday we had a hearing before the Judiciary Committee in the Assembly on our hospital lien bill—Assembly Int. No. 296—Cornaire. We are quite satisfied with the manner in which the committee received us and the discussion of the bill which ensued. We are not certain that we have convinced a majority of the committee as to the merits of the bill, but certainly we have more friends than we did prior to the hearing. We have also had an invitation from the Senate Committee to discuss the matter with them next Tuesday.

Please continue your solicitations with your legislators and especially with members of the Assembly and Senate Judiciary Committees. For your benefit the personnel of the two committees follows:

#### Senate Committee on Judiciary

William T. Byrne	Julius S. Berg
Philip M. Kleinfeld	Perley A. Pitcher
Elmer F. Quinn	Cosmo A. Cilano
John L. Buckley	Walter W. Westall
Marcellus H. Evans	Seabury C. Mastick
John J. McNaboe	Frederick J. Slater
Joseph D. Nunan, Jr.	

#### Assembly Committee on Judiciary

Horace M. Stone	Martin W. Deyo
Jasper W. Cornaire	Leonard W. Hall
Harry A. Reoux	William E. Morris
Rainey S. Taylor	William C. McCreery
Ralph A. Gamble	Millard E. Theodore
Harry F. Dunkel	Albert M. Cohen
Herbert Brownell, Jr.	Patrick H. Sullivan
	Carl Pack

You can write to them in Albany at any time, but we recommend that you see them personally, if possible, while they are home over the week-end.

Some of the arguments which seemed to have the greatest weight with the committee yesterday are: (1) Great sums of money are lost annually by hospitals in caring for persons injured in automobile accidents. In some hospitals this loss is a large share of the deficit. Some of these patients recover from insurance companies for their injury and should be obliged to pay the hospital, physicians and nurses; (2) The community in which the hospital is located must, in its financial support of the hospital, make good this loss. The physician and nurse must bear their own loss; (3) That the tendency on the part of injured persons to neglect their responsibility to the hospital, physicians and nurses is fast becoming a racket; (4) That a lien of this character would tend to interfere with prompt settlement of cases by insurance companies. It was admitted that very likely it would be more difficult to make a settlement and that certain injured persons for whom the amount of the settlement might not be more than enough to cover the medical

expenses, would lose interest in effecting a settlement, but this argument, naturally, sprung from the insurance companies and we should attack it as vigorously as we can. The insurance companies are not contributing any extra time or service without remuneration. If it takes long to settle the case, they will eventually see that that expense will be covered by the premium.

The information which the hospitals sent us regarding their losses, which would be affected by this bill, was very valuable and convincing. We suggest that the hospitals send the same information to their legislators and especially to the members of these two committees. There is a growing opinion manifest among the legislators that we have a real serious problem which needs correction and it is highly important, therefore, that we build to this growing sentiment.

Again we suggest that the public press be used. The more we stimulate public interest in this question, the more certain we are of accomplishing our wish. Therefore, **COMMUNICATE WITH YOUR LEGISLATORS AT ONCE. DO NOT POSTPONE THE MATTER.** Send a second or a third communication. The first may have been lost or the legislator may be in a more receptive mood when he receives a second or third.

Remember the number of the bill. Senate Int. No. 66—Byrne, Assembly Int. No. 296—Cormack.

**WE HAVE A SPLENDID CHANCE OF PASSING THE BILL IF WE ALL WORK TOGETHER.**

#### COMMITTEE ON LEGISLATION

Harry Aranow,  
John J. Buettner,  
Bernard B. Berkowitz,  
B. Wallace Hamilton  
Edward L. Haley

#### Announcement

**A Survey on the Incidence of Cretinism in the United States**

The JOURNAL is glad to publish the following letter and to recommend to the members of the Medical Society of the State of New

York that they assist Dr. Jackson in his valuable effort. The JOURNAL has full knowledge from authoritative sources of the high standing of all those connected with the Jackson Clinic.

#### III. JACKSON CLINIC

16 South Henry St.  
Madison, Wisconsin

Feb. 12, 1934

New York State Journal of Medicine,  
2 East 103rd Street,  
New York, N. Y.

Dear Sirs:

I am making a survey on the incidence of cretinism in the United States and would greatly appreciate it if you would insert a notice in your JOURNAL to this effect and ask any of your readers who might have records of such cases to communicate with me. I am enclosing a form which contains the information desired.

No one has ever attempted to make a survey of this kind and it will only be through the cooperation of the medical journals and the profession that it will be possible to make such a survey. I will be especially interested to receive any photographs of these cases. I am asking that the names and addresses to be given in order to eliminate the duplication of cases. When these data are compiled I expect to turn them over to the American Medical Association where they may be filed for further reference and study.

Sincerely yours,

ARNOLD S. JACKSON, M.D.

Name	Address	Sex
Nativity	Age	
Brief physical characteristics		

Brief clinical history

Gonorrhea	{ Present
	{ Absent
Mental status	
Results of medication	Signed

#### SERVICE AND SUCCESS

That the ability to pass the exams in medical school with flying colors is not everything was well illustrated by Dr. John A. Rockwell in his address at the graduating exercises of the internes of the Massachusetts Memorial Hospitals. In his class at the medical school, he recalled, was one candidate whose marks were so close to the line that several faculty conferences were held before making their final decision in his case. He was poor, he had had no collegiate or premedical training, he had borrowed more money to become married in his senior year, he had few qualifications save the spirit of service and this alone influenced the faculty to grant him his degree. He was always the last student to leave the dispensary clinics and would at

tend any call in the district no matter how tired or how late the hour. This classmate settled in a small town in Maine without even having had hospital internship. When he arrived on a bicycle ready for service, there were four other physicians in this community to whom he was a laughing stock and a joke. At the end of ten years he had superseded them all and was a highly successful and useful physician having won the trust and confidence of the people to an unusual degree.

A bill at Albany would forbid the employment of nurses more than eight hours a day in hospitals supported wholly or partly by public funds.

# Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

## EVIDENCE—TESTS TO DETERMINE THE TRUTH OR FALSITY OF TESTIMONY

In recent years considerable publicity has been given in the public press to the development of certain tests devised to aid in the determination of the truth or falsity of statements made by a person charged with crime. Of these tests the one which has been given most prominence is the systolic blood pressure test, commonly called the "lie-detector method." The use of this method has been on at least two occasions the subject of judicial ruling by the Appellate Courts of other states.

The use of the lie-detector method requires an apparatus which records continuously the blood pressure of the subject. A roll of paper is used upon which are automatically plotted in curves showing the variations in blood pressure. In ordinary use, the subject is seated comfortably in front of the apparatus with it so arranged that any changes in his pulse or blood pressure will deflect the instrument accordingly. He is asked a series of questions, a number of which are entirely irrelevant and others of which bear directly upon his relation to the crime of which he is a suspect.

Experience has demonstrated that in some instances this machine has served to break down a lying subject and causes him voluntarily to confess his crime. It would seem, however, in these cases that the value of the machine is largely psychological. The subject probably really believes that the machine can accurately determine whether his statements are true or false. In cases, however, where no voluntary confession is obtained, it is difficult to see any probative value in such a test. Obviously, an innocent person might react to the test so that guilt could be shown, while a guilty man might well maintain an attitude under questioning so that nothing could be determined against him by such a test.

Several years ago, in the District of Columbia, the results of such a test were sought to be used as evidence upon a trial. A defendant being tried for murder offered by his attorney the testimony of an expert witness to testify to the result of a systolic blood pressure deception test that

had been made upon him. The trial judge refused to permit the testimony to go into the record. An offer was then made that the witness should make such a test in the presence of the jury, which was also denied. The man was convicted of murder in the second degree. An appeal was taken and the rulings affirmed. The Appellate Court in its opinion discussed the deception test as follows:

"It is asserted that blood pressure is influenced by change in the emotions of the witness and that the systolic blood pressure rises are brought about by nervous impulses sent to the sympathetic branch of the autonomic nervous system. Scientific experiments, it is claimed, have demonstrated that fear, rage, and pain always produce a rise of systolic blood pressure, and that conscious deception or falsehood, concealment of facts, or guilt of crime, accompanied by fear of detection when the person is under examination, raises the systolic blood pressure in a curve which corresponds exactly to the struggle going on in the subject's mind, between fear and attempted control of that fear, as the examination touches the vital points in respect of which he is attempting to deceive the examiner.

"In other words, the theory seems to be that truth is spontaneous, and comes without conscious effort, while the utterance of a falsehood requires a conscious effort, which is reflected in blood pressure. The rise thus produced is easily detected and distinguished from the rise produced by mere fear of the examination itself. In the former instance the pressure rises higher than in the latter, and is more pronounced as the examination proceeds, while in the latter case, if the subject is telling the truth, the pressure registers highest at the beginning of the examination, and gradually diminishes as the examination proceeds."

The Court determined that the reliability of the test had not been satisfactorily established to permit its use in evidence, and stated:

"Just when a scientific principle or dis-

covery crosses the line between experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

'We think the systolic blood pressure deception test has not yet gained such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, developments and experiments thus far made.'

Subsequently to the said decision the precise question again came up in court very recently in the State of Wisconsin. A defendant was charged with bank robbery. His attorney during the trial offered to put on the witness stand a certain professor, who was connected with the so-called Crime Detection Laboratory of a well known university. The purpose of his testimony was to show that he had made a systolic blood pressure test upon the defendant with a "lie detector" and that it had established the truth of his claimed alibi that he was not in the same city as the robbery on the day it took place.

The defendant was convicted and on appeal sought a reversal on the grounds of the exclusion of the said evidence. It was urged on appeal that the systolic blood pressure test had been used in over ten thousand cases, and that 75 per cent of those upon whom two such tests had been made had confessed their guilt, and that consequently the method was now of sufficient scientific accuracy to be accepted as definite evidence of guilt or innocence.

The Court on Appeal, however, refused to disturb the ruling of the trial Court. It concluded that the deception test was still too much in the experimental stage to be used as proof in a court of law. For this conclusion it cited the authority of Dean Wigmore, probably the foremost authority on evidence in this country, to the effect that no safe generalizations as to the probative value of the tests could yet be made. In its opinion the Court said:

'sent, and may ultimately be of great value in the administration of justice, it must not be overlooked that a too hasty acceptance of it during this stage of its development may bring complications and abuses that will overbalance whatever utility it may be assumed to have. The present necessity for elaborate exposition of its theory, and demonstration of its practical working, in order to convince the jury of its probative tendencies, together with the possibility of attacks upon the soundness of its underlying theory and its practical usefulness, may easily result in a trial of the lie detector rather than the issues in the cause. If the defendant in a criminal case is to be permitted to have tests taken outside of court and then to produce expert testimony as to the results of the tests when these are favorable to him, without the necessity of taking the stand or submitting to tests by the prosecution, the way would be open to abuses that would not promote the cause of justice.'

Both of these decisions are undoubtedly correct. It should be noted, however, that neither court denounced the method but rather expressed a hope that further research and experimentation might establish more certain results in the detection of crime.

It is interesting to note that the courts have encountered other types of lie detecting devices, the proponents of which have failed to show that their methods have been other than fakes or quackery. One such instance came up in Missouri a few years ago in the trial of a rape case. The defense sought to put in evidence the deposition of a doctor to the effect that he had administered to the defendant what he called a "truth-telling serum," and that while under its influence the defendant had denied his guilt. In that case the point was taken up on appeal, and the Appellate Court, quite properly, we believe, regarded such testimony with suspicion, and affirmed the conviction, saying in its opinion:

'Testimony of this character—barring the fact that it cannot be otherwise classified than as a self serving declaration—is, in the present state of human knowledge, unworthy of serious consideration. We are not told from what well this serum is drawn or in what alembic its alleged truth-compelling powers are distilled. Its origin is as nebulous as its effect is uncertain. A belief in its potency, if it has any existence,

"While it may have some utility at pre-

is confined to the modern Cagliostros, who still, as Balsamo did of old, cozen the credulous for a *quid pro quo*, by inducing them to believe in the magic powers of philters, potions, and cures by faith. The trial court, therefore, whether it assigned a reason for its action or not, ruled correctly in excluding this clap-trap from the consideration of the jury."

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### Death Following Extraction of Teeth

A physician engaged in general practice who had had considerable experience in administering anesthesia was called to the office of a dentist to give an anesthetic to a patient upon whom certain extractions were to be made. She was a young woman about 21 years of age in apparent good health. The doctor examined her very carefully, testing her lungs by stethoscope and percussion, testing her heart, examining her urine, and looking in her mouth for loose teeth or foreign bodies. He decided that she was a fit subject for a general anesthesia. Thereupon he placed her in the dentist's chair and administered nitrous oxide-oxygen anesthesia. The dentist proceeded to extract three lower incisors and one cuspid and inserted a single suture in the gums, which required not more than ten minutes. About five minutes after the completion of the dental work the patient regained consciousness and was permitted to lie down on a bed in the office. The physician remained in attendance upon her, and about half an hour later he observed that the patient's lips and face became pale and her pulse very rapid and weak. He gave her a hypodermic of digifolin and a few minutes later one of camphor and oil, followed by a hypodermic of adrenalin. She did not respond to all efforts made to resuscitate her and passed away, about forty minutes after she had been placed on the bed.

The Medical Examiner was notified and he examined the body and made out the death certificate, but no autopsy was performed.

An administrator was appointed for the girl, who instituted an action against the physician and the dentist, the former being represented by the counsel for your Society. The complaint charged both defendants with having been negligent in the administration of the anesthesia and

in the extraction of the teeth, and claimed that their negligence was directly responsible for the patient's death.

The case came on for trial in due course before a judge and jury and at the close of the testimony, motions were made on behalf of the defendants to dismiss the action on the grounds that no proper proof had been put in to connect up the death with any negligent or improper act of either the dentist or physician.

The trial judge granted the said motions and judgment was entered dismissing the plaintiff's complaint.

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### Treatment of Warts

A young lady consulted a physician who specialized in surgery and neurology with respect to the treatment and removal of certain warts on the back of her left hand. The doctor tried to treat the warts by application of a solution of nitric acid. A few days later she returned and he found that the attempted treatment was ineffectual. He then suggested undertaking to remove them by the fulguration method and the patient consented. Placing her in a chair he proceeded to sear over three large warts with an electric needle. Several days later she returned, and the warts so treated were gone, but she complained of a slight swelling of the hand and wrist. He advised cold applications of boric acid solution. He saw her several times after that, and when he last saw her at the end of two weeks the swelling was gone and he did not find any indication for surgical treatment.

The patient later brought a malpractice suit against the physician, making the claim that he had used defective instruments and improper methods in treating her. She claimed that he was responsible for the swelling that developed, and she further claimed that due to negligence scars had developed at the site of the warts. A physical examination was made of her by another doctor, at the request of the defendant's attorney, and he found that she had two small white scars that were scarcely noticeable at the former location of the warts. Repeated attempts were made by the plaintiff's attorney to persuade the defendant's attorney to make an offer to settle the case. No such offer was made in behalf of the doctor, and on the eve of trial the plaintiff voluntarily discontinued the action.

**SOME PRACTICAL PROBLEMS IN THE HANDLING OF PERIPHERAL ARTERIAL DISEASE**

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The adage "familiarity breeds contempt" is nowhere more true than in clinical problems. The commonplace in medical practice is apt to receive scant consideration, while the unusual will pique our curiosity and absorb our attention. This would be an ideal arrangement if the treatment of the common conditions had reached a stage of perfection and could be automatically applied. But unfortunately this is not the case. Consequently it pays us to look at the medical condition that confronts us every day with the same inquiring mind which we bring to the scientific curiosity. Let us look in this light briefly at some of the problems of peripheral arterial disease. These disorders are among the most common ones in adult medicine; their intelligent treatment often saves the extremity, sometimes the life of the patient, and yet there is scarcely any field more frequently neglected by the practitioner or even by the textbooks of medicine.

**PROBLEM I**

*The Diagnosis of Local Circulatory Impairment.*—As an essential prerequisite to all other questions, the first problem to occupy our attention is how to diagnose local circulatory impairment. How do we determine that a given patient has a deficient blood flow in the extremity? This fact is established not by the application of any intricate apparatus but merely by the simple methods of history taking and physical examination. A deficiency of blood supply in the extremity sufficient to be clinically significant evidences itself in one or more of the following ways: (1) Sensory manifestations, particularly pain, but also coolness and paresthesias. (2) Abnormal color changes in the skin, particularly rubor in dependency and cadaveric

pallor on elevation. (3) Retardation of the return in the capillary circulation. (4) Trophic changes, the most extreme of which is gangrene.

There are two characteristic types of pain manifest in vascular disease. One of these is *rest pain* a severe burning sensation coming to the patient after a period of immobilization and elevation of the foot, usually when the patient lies down, and often particularly intense at night. This rest pain can usually be reproduced artificially by holding the feet in a high elevated position for a few minutes. For its relief the patient may have to hang the feet over the edge of the bed or actually get up and walk about the room. The second type is *exercise pain*, an increasingly intense aching produced only by muscular effort, usually walking until the continuance of the exercise becomes intolerable. If the main calf muscles are involved, then this exercise pain takes the form of claudication but if only the small intrinsic muscles of the foot are concerned, it begins as a sense of fatigue but becomes a painful aching in the foot. In either case it usually can be reproduced artificially by the patient vigorously flexing and extending the toes and foot in a vertically elevated position. A short rest period is essential to overcome such exercise pain, though it may be only a few moments' pause in walking. It is especially this exercise or claudication pain that must be distinguished from the pain caused by mechanical strain. Often the patient with peripheral arterial disease first consults the orthopedic surgeon thinking his pain is due to flat feet. And arterial disease and static deformities are frequently present in the same patient. By careful analysis of just how the pain is brought on and how it is relieved its cause

can usually be distinguished. Surely there is no excuse today for the physician to fail to recognize the vascular basis for typical intermittent claudication. Local circulatory impairment usually sooner or later causes either rest or exercise pain. Either associated with it or as an earlier symptom a sensation of coolness or paresthesia may be present.

Although these sensory abnormalities, especially pain, play an important rôle in calling the *patient's* attention to the fact that he has a condition which demands care and in suggesting the vascular basis to the *physician*, they are often far from specific. It is particularly on the basis of the physical signs which can be elicited that a deficiency of the local circulation is either established or ruled out. In the first place we always determine whether there is a good pulsation in the peripheral arteries, the dorsalis pedis and posterior tibial in the foot, and if absent here go to the popliteal, the femoral or even up to the iliac until definite arterial pulsation is felt. If there is no palpable pulse below the femoral triangle, there is almost always a deficient circulation in the foot. But though absence of pulsation in the two main arteries of the foot is evidence of arterial disease, frequently it is compatible with an efficient local circulation carried on through small collateral arterial channels; and a serious deficiency in the local circulation due to occlusion of the terminal vessels may be present, even though good pulsation is felt in the dorsalis pedis and posterior tibial arteries. How then do we clinically establish the existence of significant circulatory impairment? There are three signs that are particularly valuable. All three of them bring out in visual form the physiological response of the skin circulation. The first is *dependent rubor*, an intense reddish or plum coloration that appears in the toes and spreads upward for a variable distance when the foot is put in dependency. It usually takes several minutes to develop the maximum depth of color. Of course, a normal foot in a dependent position assumes a slightly pinker color than when it was horizontal but dependent rubor is well beyond the response of a normal circulation, and is always pathological. The next sign may be considered as the reverse of dependent rubor. It is a cadaveric pallor that appears in the foot with deficient circulation when the leg is elevated from the horizon-

tal to the vertical position. It may develop very quickly or require several minutes of elevation to be brought out, depending on the degree of impairment in the local circulation. In order to provide a rough measure of the degree of circulatory impairment existing, Buerger, a number of years ago, made use of the angle at which circulation in the foot was just maintained. This he named the angle of circulatory sufficiency. In the most severe grades of impairment this position is actually below the horizontal. The response of skin color to elevation is probably the most valuable single sign in the detection of less extreme degrees of local circulatory impairment. Exercise of the foot in the elevated position is of great assistance here in hastening the development of the characteristic pallor.

The third method of estimating the functional response of the local circulation is to measure the time that it takes for the return of skin color after temporarily blanching an area by pressure. This is called the capillary return time. Obviously it will vary not merely with the circulatory efficiency but also with the size of the compressed area. Consequently it is essential to apply this pressure to about the same size of area each time. Minor variations are not of importance. One learns to recognize about how fast the return color progresses under normal conditions from the periphery to the center. When the local circulation is seriously impaired this return of blood to the skin capillaries becomes very slow, and it is perfectly obvious that the head of arterial pressure effective in this area is very low, indeed. This capillary return test can be used in the horizontal position or at various angles of elevation where it furnishes a further refinement in testing the angle of circulatory sufficiency.

All three of these tests based upon the effect of certain factors on the color of the skin have limitations beyond which the normal reaction does not go. We can compare the performance in any individual patient with this normal reaction and say that it is, or is not, within the normal limits. Fortunately in vascular disease, we can also compare the response in one extremity with that in the opposite one. Although in most of the common vascular diseases the arteries of both extremities are involved, usually one of them has a greater degree of circulatory impairment,



so that its response can be compared with that of the more normal one. These color changes associated with variations in posture and following compression are the most specific evidences of local circulatory impairment. However, the latter also is associated frequently with trophic disturbances ranging all the way from slight glossiness of the skin or irregularities of the nails to gross necrosis of tissue. Massive gangrene is, of course, evidence of complete failure of the circulation, at least to the involved area, but it is then too late to save the gangrenous part, though amputation of the entire limb may not be required if spreading infection from the necrotic tissue can be prevented. By the application of the foregoing methods, it is possible to diagnose local circulatory impairment, and this is the first step in the handling of any type of peripheral arterial disease. There are of course certain diseases, such as Raynaud's disease, in which the circulation is impaired initially only during ischemic attacks, while between the attacks there is no evidence of deficiency in the blood flow. Typical examples of these conditions can usually be recognized from the history and the circulatory disturbance verified by observation of the patient in an attack.

## PROBLEM II

*Differentiation of Vasomotor Spasm and of Mechanical Occlusion*—After it has been established that local circulatory impairment exists, the next important point to determine is its cause. Careful examination of the palpable peripheral arteries will usually show by an absent or diminished pulsation or by a sclerosis of the vascular walls whether there is evidence of organic disease. Most of these patients consulting their physician have evidence of such organic disease. Until the last decade this was considered proof that the circulatory disturbance was on a mechanical basis due to actual occlusion of the arteries supplying the part. Recently, however, the importance of collateral circulation in organic peripheral arterial disease has been rediscovered. The main arteries to the foot may be blocked, and yet circulation entirely efficient for its nutrition under ordinary conditions may be obtained. This is due to the blood supply through the small anastomotic channels which carry the circulation past the obstructed point. The condition of the

smaller vessels comprising the collateral circulation then becomes a matter of great importance. The nutrition of the foot depends upon the preservation or enlargement of these small channels. Normally the latter are subject to a vasoconstrictor tonus. We find, however, that there is a compensatory mechanism which abolishes this tonus when a sufficient degree of circulatory impairment arises. Thus in the ordinary arteriosclerotic disease when the nutrition of the foot is endangered, it is usually impossible to demonstrate any persisting vasoconstrictor tonus. In conditions associated with an inflammatory reaction extending through the wall of the vessel there is often, at least in one stage, a serious circulatory impairment in the foot which can be reduced by eliminating the vasomotor innervation. It consequently becomes of great importance to determine in any individual case what proportion of the deficiency in peripheral blood flow is due to vasoconstrictor spasm and what to mechanical occlusion. This we have most simply and reliably found to be demonstrated for the lower extremity by blocking the posterior tibial nerve temporarily with novocaine. If the circulation to the foot (shown not only by surface temperature determinations for the purpose of an accurate record, but also by obvious visual and palpable evidence) is notably improved following this procedure, then vasomotor impulses are contributing a clinically significant amount to the serious circulatory impairment in the extremity. This differentiation serves as a rational basis for treatment. If occlusion alone is responsible for the circulatory impairment then our measures are directed only toward making as efficient as possible the reduced blood flow and preventing any further impairment in so far as possible. This is the conservative treatment of vascular disease which often accomplishes a great deal for the patient and saves many limbs that without its detailed and meticulous use would be lost. Rest, protection of the extremity from cold and trauma, the vascular exercises proposed by Buerger and adopted with variations in practically all of the large vascular clinics of the country, the administration of fluids either by mouth or intravenously, and the complete prohibition of the use of tobacco in thromboangitis obliterans are the fundamentals of the physical part of this treatment. Fully as important as

any of the above, however, is to give the patient a philosophy of life which will enable him to live within the limitations prescribed by his condition. On the other hand, when spasm is proven by test to play an important rôle in the circulatory deficiency, then the complete elimination of vasoconstriction by lumbar sympathetic ganglionectomy for the lower extremity provides lastingly the same, or sometimes a little more, improvement in the local circulation as is temporarily produced by the nerve block test. Whether operation is indicated has to be decided for each case in this group on its merits. However, I will say that when the cases are meticulously chosen and confined to those shown to have an important element of spasm, the patients have been uniformly most gratified by the results. Even here, however, there usually is a limit within which the patient should stay. Thus, if claudication was present before operation, it usually persists after operation, though nearly always there is a considerable increase in the amount of exercise required to bring it out. Periarterial sympathectomy is of little or no value in this condition. The final position of sympathetic ganglionectomy in the treatment particularly of thrombo-angiitis obliterans will probably not be established for several more years; but in our hands by the careful selection of cases, it has been of definite value for the group to which it is applicable.

#### PROBLEM III

*Manifestations of Vasomotor Neuroses Secondary to Other Lesions.*—Many lesions primarily or secondarily involving the central or peripheral nervous system are associated with interesting vasomotor phenomena. Such symptoms are often entirely overlooked. They are worthy of clinical investigation for the light they can throw upon the relationship of sympathetic irritation to the primary diseases. Thus, long-standing paralysis from anterior poliomyelitis is often associated with a cold clammy extremity. This is also found in certain cases of spina bifida, in organic nervous diseases such as amyotrophic lateral sclerosis, and in certain functional nervous disorders such as hysteria. It is also observed in association with typical causalgia following a partial peripheral nerve lesion and with the neuritis produced by a cervical rib. In all of these instances in addition to the tendency toward a

lower temperature in the involved area and a sensation of coolness, there is usually a painful hypersensitivity to cold and sometimes increased sweating. Rarely, except in causalgia, does this vasomotor neurosis reach a sufficient degree so that it demands treatment. It should be of interest to the neurologists. It is also of considerable interest to us as it throws light on the next group which presents an important clinical problem.

#### PROBLEM IV

*The Recognition of Important Vasomotor Reflex Disturbances Following Trauma and Its Repair.*—As the result of trauma, there occasionally arise certain striking clinical pictures of reflex vascular disturbances. There are three different types of this which we recognize. The first one is a paroxysmal angiospasm resembling very closely a Raynaud's disease in which the involvement is limited to the traumatized area or the peripheral field of distribution of an injured nerve trunk. This is a good illustration of a greatly increased reflex hypersensitivity to cold, which outlasts by months and years the other evidences of the trauma. The second type of post-traumatic reflex disturbance was described by Leriche as "traumatic arthritis." I choose to refer to it as "reflex traumatic arthritis" in order to distinguish it from the mechanical type of arthritis which results directly from gross trauma inflicted upon the joint itself. Fontaine and Hermann have recently discussed this clinical condition under the name of "post-traumatic painful osteoporosis." The trauma which incites the condition may be a major single injury of considerable magnitude or it may be repeated lesser insults. There are two characteristics of the clinical picture, namely, pain in the joint particularly on its use, and an extreme progressive osteoporosis which is not associated with infection. There are often other evidences of vasomotor irritability such as an increase in sweating, coolness and clamminess of the toes, etc. The third type of clinical picture induced by trauma resembles the previous one, except that in place of osteoporosis there is an extreme degree of edema usually associated with severe pain and not dependent upon any gross blockage to the main blood vessels. For all three types of reflex traumatic neuroses conservative treatment consisting in protection from cold, rest at first followed by

graduated exercise, and contrast baths, is usually effective in controlling the symptoms in the mild and moderately severe cases. In the very severe cases it probably is advantageous to interrupt the vasomotor reflex arc by surgical intervention. And in this case periarterial sympathectomy is worthy of a trial followed by ganglionectomy later if the simpler operation does not relieve the symptoms. The importance of this group is not only in the isolated examples of a striking clinical condition that may lead to serious disability unless properly treated, but perhaps even more in the recognition of vasomotor disturbances as a fundamental type of response to trauma and its repair.

#### PROBLEM V

*The Responsibility for the Immediate Recognition of Embolism in the Extremities*—Embolism is a more common cause of circulatory impairment in the extremities than is generally realized. Larger emboli blocking the iliac, the femoral, the subclavian, or the axillary arteries almost always cause a serious disturbance in the circulation of the foot or hand, and frequently lead to gangrene unless removed. Key, to whom much of the credit is due for advances in this field of surgery, in 1929 collected and analyzed 216 cases of embolotomy in the extremities. If the embolus is removed in the first six hours, the results are good, while with each hour's delay after this time the probability of a recurrent thrombosis at the site of the embolus increases rapidly. After twenty-four hours it is scarcely worth while to do an embolotomy. The ideal result that can be obtained when the time between the occurrence of the embolus and its removal is minimal is shown by the following case.

W. A. aged seventy, was convalescent twenty-six days after a suprapubic prostatectomy. He had arteriosclerotic and hypertensive heart disease accompanied by auricular fibrillation. And at one time after operation he developed some pulmonary edema. All cardiac symptoms had disappeared, though some irregularity of rhythm persisted. He was up and around and was merely waiting for his suprapubic catheter to be

removed. popliteal, dorsalis pedis and posterior tibial pulsations were absent, and the femoral pulse was felt only in the upper part of the femoral triangle. The left foot and lower leg presented an extreme pallor and were much cooler than those of the opposite extremity. The patient could not move his foot. The diagnosis of an embolus in the femoral artery

was made. Two hours after the development of the first symptoms it was removed with complete restoration of vigorous pulsation in the peripheral arteries and the relief of all symptoms. In spite of the fact that the femoral artery where it was opened to remove the embolus showed marked sclerosis with some calcification in the walls he has had no evidence of thrombosis. It is now seven months since embolotomy.

In view of the extreme importance of removing the embolus within the first few hours, the responsibility for recognizing the occurrence of this condition rests upon every practicing physician. Fortunately if this possibility is kept in mind the diagnosis of embolism in a major artery is usually not difficult. The patient notes the sudden occurrence of an unusual sensation in the extremity. Most often this is a sharp pain which may then rapidly increase until it becomes severe. Sometimes, however, the abnormal sensation is a tingling or a coolness. Any such history imperatively demands immediate investigation. On examination in such a case pulsations are absent in the arteries past the site where the embolus has lodged. And an obvious decrease or absence of blood flow to the distal part of the extremity is usually easy to recognize. Occasionally when the onset of symptoms is not so abrupt one may doubt whether the arterial lesion is embolism or thrombosis. In such a case if the patient is seen within ten hours of the onset of symptoms it is wise to proceed on the assumption that it is an embolus. Usually the delay in operation is not due to the difficulty in diagnosis, but it is caused by the failure of the physician to consider embolus or frequently by the procrastination of the patient in calling a physician. Most instances of major peripheral embolus occur in patients with cardiac lesions and especially in those who at one time or another have fibrillated. Consequently it seems advisable to warn all such patients that if pain or other unusual sensation should occur suddenly in an extremity the physician should be immediately notified. As embolism occurs nearly always as the complication of a serious lesion and as this process may take the form of multiple clots lodging in the same extremity or in various regions, immediate operation will not always be successful or in some cases even advisable. However, the obtaining of prompt operation by a surgeon well versed in the modern technique of vascular surgery will save many extremities in which gangrene develops following embolus.

## THE MANAGEMENT OF UTERINE BLEEDING

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Uterine bleeding is a very common gynecological condition and one which the general practitioner most frequently encounters. Considered from the seriousness of its direct and indirect results it is the most important manifestation of gynecological disease which comes to his attention.

Although the incidence of its occurrence is highest at the extremes of menstrual life it can and does occur at any age period from infancy to senility. A fairly large number of patients showing this symptom may be classified as very elderly women. One interesting type of bleeding occurs several years after the menopause with an apparent normal return of menstruation as well as sex characteristics. In these cases the endometrium shows hyperplasia such as is seen at times near the menopause. This condition is due to an ovarian tumor whose structure is composed of an abnormal overgrowth of follicular elements. The tumor, while malignant in character, offers excellent chances of cure.

The term uterine bleeding is preferable to uterine hemorrhage as it is more inclusive. The amount of bleeding bears no relation to the seriousness of the condition responsible for it. Consequently, slight bleeding is as important as profuse hemorrhage, if not more so. While profuse hemorrhage demands prompt and adequate care, slight bleeding is frequently ignored by the patient and too often by the physician. Even when the underlying condition is not of a serious nature, the anemia resulting from slight but protracted bleeding may be more resistant to treatment than that due to profuse hemorrhage, where the recovery is usually prompt and complete. The physician has a grave responsibility in all these cases and the only safe policy for him to accept is that no uterine bleeding, no matter how slight, should ever be neglected.

Uterine bleeding is sometimes classed as physiological and pathological. Properly speaking the only bleeding which could be classified as physiological is menstruation. Menstrual blood shows marked differences from the blood of the body. The red cells

and leukocytes are decidedly less, and the hemoglobin much lower. In addition to admixture of epithelial cells and mucus, menstrual blood contains glycogen, lipoids, arsenic, magnesium, phosphorus, and calcium. Its principle distinguishing feature is its lack of coagulability. Consequently, this is not bleeding in a true sense of the word. Undoubtedly, menstruation may be increased in amount or prolonged and still be physiological. However, very frequently there is the additional factor of real blood loss, so that the condition is pathological. It would, therefore, seem wise to view as uterine bleeding any abnormal bloody discharge from the uterus and to consider this as pathological until proven otherwise. No definite standards can be formulated as to what constitutes uterine bleeding. Variations from the normal type and cycle of menstruation are more important than the actual amount and duration of blood loss.

The management of uterine bleeding consists in ascertaining the cause of this symptom and correcting the condition responsible for it. The conditions associated with uterine bleeding may be divided into two large groups as to whether or not there is an existing, or has been a recent, pregnancy. The conditions associated with pregnancy are responsible for the largest number of cases of uterine bleeding occurring during the reproductive ages. This group may again be divided as to whether the bleeding occurs in the latter period of gestation when the pregnancy is most apparent, or in the earlier period where pregnancy may not be evident or suspected. The first group includes placenta praevia and abruptio placentae, both of which require proper obstetrical treatment and are not within the limits of this discussion. Within the second group are abortion, ectopic pregnancy, hydatidiform mole, and chorioepithelioma. As has been mentioned, the diagnosis here may be complicated by the fact that the patient is unaware of an early pregnancy, or may possibly try to deceive the physician as to the existence of such a condition.

Abortion should rarely be diagnosed incorrectly and should be treated either conservatively, or by a pack, or by removal of the remaining gestational products, either manually or by the euret. No active interference should occur if there is associated fever, unless the bleeding is profuse or protracted. A histological examination of the curettings should always be made.

Uterine bleeding of various types is usually observed in ectopic pregnancy. Often it may be the principal complaint, and occasionally the only symptom. Though the diagnosis should nearly always be made in the sudden tragic cases, it frequently is not made in the more chronic cases. While the age of the patient, a history of previous sterility, abnormal pregnancy, a previous operation, a period of amenorrhea, spotting of blood, and attacks of colicky pain in either side, frequently associated with syncope, should suggest this condition, it is well to remember that the most typical thing about ectopic pregnancy is that it tends to be atypical.

Mole, while not frequent, occurs commonly enough to be met by the general physician now and then as a cause of uterine bleeding. It is necessary that one should be sure that the mole has been completely passed. Bleeding after the passing of a mole is highly suspicious of the existence of the rare but markedly malignant tumor, chorioepithelioma.

The second group in which there is no recent or existing pregnancy comprises a large list of important conditions as follows:

- Functional conditions.
- Endocrine disturbances.
- Constitutional diseases.
- Inflammation.
- Malpositions.
- Benign tumors.
- Malignant tumors.

Functional conditions are probably always due to some endocrine disturbance so that these two groups can be discussed together. It is to be expected that the onset and abatement of menstrual life should be accompanied with functional irregularities, including abnormal bleeding. While this principle may be accepted, without undue hazard in treating the menorrhagia of adolescence, it is entirely unsafe in the management of patients at or near the menopause, until organic disease has been ruled out by careful examination including biopsy. It was hoped that our newer

knowledge of the physiology of ovulation and menstruation, together with recent information concern the action of the anterior hypophysis, would be most helpful in these functional disturbances, but it has failed to do so. The marked and striking results following the injection of these extracts into animals, have not been paralleled in patients. Clinical symptoms do not form a reliable method by which variations in the amounts of hormones in the blood can be determined. We lack knowledge as to absorption, assimilation and elimination of these hormones when injected. We also know that tremendous doses are required to produce in humans, effects which have been noted in animals, and that some commercial preparations of these hormones show a marked tendency to deterioration. Possible dangerous effects following their use has not been properly appreciated. The psychic effect has been lost sight of. It is, therefore, not surprising that at the present time the consensus of well-informed opinion is that the substitution therapy for functional disorders is of little value. It is to be regretted that its clinical application has outstripped its experimental investigation.

The diagnosis of a functional cause of the menorrhagia of adolescence is usually made by a process of elimination. The majority of these cases are best treated in a conservative manner, after the condition has been fully explained to the patient or her parent, by instituting the proper hygienic régime with the use of tonics, and pituitrin at the time of severe bleeding. As a matter of fact, many of these cases take care of themselves spontaneously. At times, a curettage will be necessary and rarely this may have to be repeated. Radium in small doses should only be resorted to in the very exceptional case which fails to progress satisfactorily under other forms of treatment, and then should be used with extreme conservatism and by one fully experienced with its effects. Some of these cases are due to hypothyroidism. When this has been determined by approved methods, thyroid extract may be administered. Without doubt the relation existing between the thyroid and gonads is a close and varied one because both menorrhagia and amenorrhea occur with hypothyroidism and menorrhagia occurs in both hypo- and hyperthyroidism.

Glandular hyperplasia of the uterus is included in this group as it is believed by

some that it is due to abnormal ovarian hormone activity. This condition is responsible for most of the bleedings occurring at or near the climacteric, which are not due to fibroids, polyps, or malignant disease. The bleeding is usually quite profuse and very protracted with the result that the patient not only suffers much inconvenience, but also develops a marked secondary anemia and general poor health. The histological appearance of the endometrium removed at curettage is quite characteristic and forms the basis of the diagnosis. When this condition is present at the menopause, it is promptly and permanently cured by radium. Although it is by no means definitely proven that it frequently occurs, adenocarcinoma has been observed developing on a glandular hyperplasia. Therefore, it seems advisable that a patient in the menopausal age, presenting this condition, should have radium therapy not only to control the bleeding but possibly as a prophylactic against the future development of cancer.

Heart disease, nephritis, hypertension, anemias, especially of the chlorotic type, and purpura, may cause uterine bleeding and should always be thought of when such bleeding exists. The bleeding, if due to any of these causes, usually subsides under proper treatment. Two young individuals with profuse uterine bleeding due to purpura have been admitted to my service at St. Joseph's Hospital. Both rapidly improved after they had received transfusions and a few injections of pituitrin together with proper medical care. I have since learned that one of these cases died at home in a subsequent attack from a hemorrhage in the brain.

Among the inflammatory conditions which may cause uterine bleeding are salpingitis, subinvolution, and lacerations and erosions of the cervix. Naturally, the appropriate treatment of these conditions is indicated for the relief of other symptoms as much as the bleeding. Bleeding seems to be more prominent in those cases of salpingitis where the ovaries are especially involved and where the uterus is pulled back by strong adhesions.

Bleeding may occur in some cases of retroversion. This is probably due to the passive engorgement of the uterus which has resulted from an obstruction of the circulation of the pelvic veins. An associated prolapse is probably as much responsible for this condition as the more ap-

parent retroversion and with its usual trail of symptoms demands relief as much as the bleeding.

The benign tumors of the uterus are responsible for many cases of uterine bleeding. It is well known that fibroids are very common tumors, it being estimated that they occur in from 20 to 50 per cent of all women at different ages. They comprise from 4 to 8 per cent of the material in gynecological clinics. In at least one-third of all large fibroids bleeding is the cardinal symptom. Eighty-five per cent of these are submucous fibroids. It is important to remember that fibroids are slow in growth manifesting symptoms during the latter part of menstrual life, that they are very prone to degeneration and that cancer of the body of the uterus shows a higher incidence in the fibroid uterus than in the normal uterus. The treatment of fibroids causing bleeding depends on many factors. Myomectomy is the treatment of choice in young women in order to preserve function. Because of their particular tendency to degenerate, large fibroids should always be removed. However, at or near the menopause, fibroids of moderate size, not producing pain but causing bleeding, should be treated by radiation. It is imperative that this should always be preceded by curettage. Inasmuch as in these cases bleeding is the symptom demanding relief, radium is preferable to x-ray. It has the added advantage of usually completing the treatment at one time. Submucous fibroids and fibroids associated with infections should never be treated by radiation. Polyps, either cervical or corporeal, are also a frequent source of uterine bleeding. The similarity of the history in these cases to that of cases of cancer is most marked. Except for polyps originating near the external os which can easily be removed, the cervix should be dilated and both the cavity of the body and the canal of the cervix curetted, as polyps are frequently multiple and cancer of the body may also be present. The cervix should also be cauterized. Adenomyomata which also cause bleeding are not suitable to myomectomy but require a hysterectomy. Benign ovarian tumors have little effect on uterine bleeding, though it is possible that microcystic disease of the ovaries may be responsible for some cases.

Uterine bleeding occurs practically always in malignant disease of the uterus. This valuable manifestation of this most

serious condition should be more properly evaluated and made use of by the physician for the purpose of early diagnosis. Marked differences exist between cancer of the cervix and cancer of the body of the uterus. Cervical cancer is at least four times more frequent, occurs at an average age ten years earlier, metastatizes much earlier, and shows a decided lower percentage of cures than does cancer of the body. Cancer of the cervix is usually an epithelioma while that of the body is adenocarcinoma. Cancer of the cervix occurs almost exclusively in multiparae and the bleeding is of a contact type. Cancer of the fundus is distinctly a postmenopausal disease, practically 75 per cent of the cases occurring during the sixth and seventh decades. It is needless to say that the early treatment of cases of uterine bleeding due to these causes is most imperative. The majority of cases of cancer of the cervix are now being treated with radium. Cancer of the fundus offers reasonably good chances of cure following a hysterectomy. Nevertheless, corporeal cancer is as malignant as cervical cancer. The higher percentage of cures of cancer of the body is due largely to the protection of the myometrium against the advance of the growth. Sarcoma of the uterus is practically always accompanied by uterine bleeding, though frequently there is also a characteristic profuse watery discharge. Treatment of this

condition is not highly successful. Cancer of the ovary metastatizes quite early to the uterus and therefore is frequently accompanied by uterine bleeding. Unfortunately, cancer of the cervix in a large percentage of cases has progressed to such an advanced stage as to make accurate diagnosis possible by palpation and inspection. All suspicious early cases should have a biopsy done. Cancer of the body offers no characteristic physical signs, examination frequently being negative. Consequently, curettage is necessary for diagnosis, about 20 per cent of unsuspected cases being found in this manner.

This rather extensive and superficial review of the conditions associated with uterine bleeding has been given in order to show the wide variety of causes of this condition. It has also been the purpose to indicate the seriousness of several conditions which manifest themselves by uterine bleeding as much as in any other way. The physician should always realize his responsibility in treating cases of uterine bleeding. This responsibility increases as the patient's age approaches the menopausal period. Nothing short of a positive diagnosis as to the cause of uterine bleeding should ever suffice. Curettage and the removal of cervical tissue are the only sure means of diagnosis. Radiation treatment for uterine bleeding should never be employed until cancer has been excluded.

### THE THOMAS W SALMON MEMORIAL LECTURES

As announced in the February 1, 1934, issue of the *JOURNAL* the chosen lecturer, Dr C MacFie Campbell, Professor of Psychiatry at Harvard University, will deliver three lectures on April 13th, 20th and 27th at 8:30 P.M. at the New York Academy of Medicine, 2 East 103rd Street, New York City.

The subject of these lectures is Trends in Psychiatry. Brief abstracts for each lecture have been received and are here presented as follows.

**Lecture 1 Trends in Psychiatry** A discussion of the various methods of approach during the past thirty years and of the varying emphasis laid by different individuals on different factors in the whole field. Reference to the importance of histopathology, the infectious theory, the biochemical investigations, psychoanalysis, Meyer's broad and well integrated formulation. This lecture would be a discussion of trends with some evaluation of the drift of opinion. It would show some of the progress of thought during the life time of Thomas Salmon.

**Lecture 2 Classification vs Dynamic Analysis**

A presentation of factual material with analysis into sub groups, review of the actual stuff of life presented by these sub groups. Subordination of classification and verbal discussion to observation and reduction of the concrete problem to biological components and constitutional factors.

**Lecture 3 Conclusions and Suggestions** The orientation with regard to the field outlined in the first lecture and the review of the actual stuff of psychiatric work may suggest certain practical conclusions and may indicate directions of theoretical investigation.

One of the smallest x ray machines in the world, weighing only 7 lb and able to take perfect pictures in two seconds, was shown at the Congress of the British Institute of Radiology by Dr A Bouwers of Eindhoven.

Vitamins prepared in the laboratory fall short of expectations, declared Dr Chalmers Watson in an address in Edinburgh, and he recommended giving plenty of fresh foods as the best way to provide them.

OBSERVATIONS ON SOME DISEASES OF THE SKIN  
IN INFANCY AND CHILDHOODHOWARD FOX, M.D.  
*New York, N. Y.*

## NEVI

The term birthmark as a synonym for nevus is somewhat misleading as the majority are not actually present at birth. Some do not occur in infancy, or even in childhood, and only appear in adult life. Vascular nevi strictly include those composed of lymphatic vessels, but the term is ordinarily used to denote lesions composed of blood vessels. From the standpoint of both treatment and prognosis there is an important distinction between the flat vascular nevus (port wine mark) and the raised hemangioma. A mild variety of the flat type is often seen at the nape of the neck in new-born infants, usually disappearing before the end of the first month. Remains of it often persist, however, in women throughout life. The flat type of nevus shows no tendency to change and is permanent. The raised vascular nevus (hemangioma or strawberry mark) is more common than the flat type. Hemangioma may be single or less often multiple and occurs fairly often upon the face.

The treatment of flat vascular nevi is unsatisfactory, especially when the lesions are extensive as in cases involving one side of the face. In my opinion no treatment of any kind should be attempted in such cases as the results are often worse than the original defect. It is always possible to make them paler by intensive use of the water-cooled mercury vapor lamp (Kromayer). It is exceedingly difficult, however, to treat a number of small circular areas and produce a uniform lessening of the color. Too often an unfortunate patch work appearance is the result. Hemangiomas, on the other hand, are very amenable to treatment either by freezing with carbon dioxide snow or by radium. One of the types of cryocautery can be used for freezing, though the degree of cold is not equal to that of a crayon of carbon dioxide snow. In my opinion, there is often, if not invariably, a spontaneous involution of these lesions because, in spite of their comparative frequency in infants, they are not seen in adults. Many are treated, though certainly not all of them. Frequently after

traumatism and bleeding, thrombosis takes place with subsequent disappearance of the nevus.

Pigmented and hairy nevi may be removed by various destructive methods such as carbon dioxide snow, electrodesiccation, electric cautery, or electrolysis. At times the lesions are so extensive that treatment is out of the question, as in cases occupying large surfaces of the body such as the so-called "bathing-trunk" type. In one of the writer's cases of the latter variety there was an association of lipomatous nevi about the genital region which were excised by the knife.

## PSORIASIS AND HERPES ZOSTER

Psoriasis and herpes zoster are examples of skin disease which affect both children and adults, but which are nearly always of comparatively mild type in children. While psoriasis may begin in the later years of childhood, it is usually of superficial type with comparatively little thickening of the skin or masses of typical micaceous scales. The writer has never seen a child with the severe inveterate type so common on the extensor aspect of the extremities in adults.

Herpes zoster occurs in childhood but is not accompanied by the severe neuralgic pain of which many adults complain. Comby states that herpes zoster in children under ten years of age invariably runs its course without any pain. The indications for treatment are to relieve pain and protect the vesicles from rupture and possible secondary infection. In children it is only necessary, as a rule, to protect the lesions by a bland dusting powder such as talcum or by painting the surface with flexible collodion. Vesicular eruptions in general should not be covered by ointments as they tend to macerate and rupture the lesions and thus lead to infection and subsequent scarring.

## PITYRIASIS ROSEA

Pityriasis rosea affects both children and adults and in any case is a self-limited affection which runs its course in five to ten weeks and rarely recurs. The chief importance of the disease lies in its dif-



ferentiation from the macular eruption of acquired syphilis which is a rare manifestation in childhood. The chief differential point is that the macular syphilide is free of scales while pityriasis rosea as its name would imply presents branny scaling. In perhaps half of the cases there is an initial patch which is usually circinate in configuration. The general eruption appears rather suddenly, almost like an exanthema and varies in profuseness and in type. The majority of cases present round or fusiform macules or maculopapules with a moderate amount of branny scales. The less common type consists of circles with pinkish border and yellowish brown center. The disease occurs chiefly upon the trunk. Itching varies and may be absent, mild, or at times severe.

Treatment shortens the course of this harmless disease, the author's favorite method being a modification of that suggested by Jamieson. After a daily prolonged warm bath, an ointment of 3 per cent salicylic acid is rubbed into the affected areas. In ten days after such treatment the greater part of the eruption usually disappears.

#### RINGWORM

Ringworm of the scalp, in the form of coin-sized scaly patches covered by short broken hairs, is caused by some species of microsporon and is easy to recognize. The presence of ringworm of the scalp due to a trichophyton is, however, often overlooked as it occurs in small scaly areas which are mistaken for seborrhea. Epilation by x-rays constitutes the quickest and most reliable method of treatment. In the hands of experienced operators using standardized apparatus, it is also safe. Epilation by oral administration of thallium acetate was first introduced in Mexico City, Dr. Gonzales Herrejon being the first to standardize the dosage. By 1930, Dr. Cicero had treated 900 cases and Dr. Gonzales Uruena had treated 600 cases by this method without any untoward results. It has also been successfully used in numerous clinics in this country including the author's own at New York University. It would be an ideal method of treatment if it were invariably safe. In the past few years, however, a number of deaths have occurred in England, Germany, and Spain in children who were treated by this method. The possibility of causing death in a disease which is essentially harmless and which

nearly always disappears spontaneously at puberty is sufficient in my opinion to condemn the use of thallium acetate. Furthermore, the drug has certain contraindications and extreme care must be used in calculating the dosage in relation to body weight. Its use in the United States has been practically discontinued.

#### PEDICULOSIS

Among cutaneous infestations of worldwide distribution pediculosis capitis is always common, especially in the poorer classes. Of the three types of pediculosis, only that which affects the scalp is common in children. Body lice are seldom seen in children and pubic lice are only seen at times upon the eyelashes. The signs and symptoms of pediculosis of the scalp are too well known to warrant their description. It is not generally known, however, that this affection which is so common in white children of the poorer classes is comparatively rare in the negro. In a survey of school children in New York City, made by the Department of Health, it was found that in a series of 28,000 children pediculosis capitis was 33 times as common in whites as in negroes. The cause of this comparative racial immunity is not known.

#### WARTS

Warts of various types are common affections of childhood, although they are not confined to this period of life. The ordinary verruca vulgaris or "seed wart" is familiar to everyone but is often difficult to remove, at least without producing a scar. In my opinion it is improper to cause unnecessary scarring especially on the hands of girls. For this reason we do not often use electrodesiccation for their removal and would not think of using nitric acid on account of its strong tendency to cause keloid scars. At times ordinary warts disappear after a single erythema dose of x-rays though failure often follows, even when massive doses of this agent are used. When common warts are situated about the nail folds, a trial with x-rays is worth while as it is difficult to anesthetize this region for treatment by the curet or electrodesiccation. A favorite method of the writer is to freeze the lesion with ethyl chloride spray protecting the surrounding skin with vaselin and then removing the lesion with a sharp bone curet. This is usually followed by permanent cure.

It is well known that common warts are

most capricious in their course and often disappear without apparent reason. They may disappear after mental suggestion, though this seems difficult to understand in view of the fact that they are caused by a filtrable virus. That these warts can be cured by mental suggestion has been proven beyond question by Bloch in a reasonably large series of cases.

The ordinary juvenile flat wart may be removed by a sharp curet without causing any scar. When the lesions are numerous, and at times there are one or two hundred or more, it is advisable to try the internal administration of protiodide of mercury tablets in doses of  $\frac{1}{8}$  to  $\frac{1}{4}$  gr. after meals. This will often cause a complete cure in three or four weeks without any other treatment.

Plantar warts are seen at times in children, though not as often as in adolescents or adults. Here the best results are obtained by massive doses of x-rays, some giving as high as seven or eight erythema doses of unfiltered irradiation, the lesions being closely screened by lead foil.

#### ALOPECIA AREATA

Alopecia areata is fairly common in childhood and at this period is as capricious in its course as in adult life. Although the disease was described by Celsus, we are as ignorant of its causation as was this early Roman writer. The presence of more or less completely bald patches without any redness, scaling, subjective symptoms or atrophic changes makes the diagnosis simple.

It is freely admitted that in a disease which usually disappears spontaneously, it is difficult to judge of the value of any curative measure. I feel convinced, however, that intense local stimulation often accelerates the regrowth of hair. For one or two small patches, painting with pure phenol is recommended, the procedure to be repeated at intervals of a week or ten days. For larger patches it is well to try intense irradiation with ultraviolet light, such as the ordinary air-cooled type of mercury vapor lamps. This merely represents a convenient and cleanly method of stimulation.

Following the recent publication of an article on the use of the anterior lobe of the pituitary gland in alopecia (mostly of the alopecia areata type), I gave this remedy a thorough trial. My results were absolutely nil and all of my dermatological

colleagues with whom I have discussed the subject have had similar results.

#### RARE DISEASES

Mention should be made of several uncommon or rare diseases of the skin which are of special interest. *Urticaria pigmentosa* is poorly named as it has no relationship whatever to ordinary hives. It is classed as a congenital anomaly of the skin and consists of yellowish brown macules of pea to small-coin size which are mostly present on the trunk. Upon vigorous friction the lesions may show an urticaria-like reddish elevation. The affection is entirely harmless causing no subjective symptoms and disappearing spontaneously around puberty. Treatment is of no avail.

*Xeroderma pigmentosum* is a rare affection of childhood which often occurs in more than one child in a family. It is essentially a precocious senility of the skin, the changes simulating those of old age or those of chronic radiodermatitis after improper use of x-rays or radium. Epitheliomas eventually develop and many die before adult life is reached. The skin shows a peculiar sensitivity to ultraviolet rays and it is always advisable to protect the exposed parts from direct sunlight.

*Hydroa vacciniforme* is thought to be another example of sensitivity to light in those whose tissues contain hematoporphyrin. The usual history is that of repeated attacks in the spring or summer of a vesicular eruption upon the exposed parts. Some of the lesions have a slight resemblance to vaccinia from which the name of the disease is derived. The eruption is often profuse and causes a good deal of distress. A peculiar feature is that after involution of the lesions more or less pitted scarring remains. In rare instances the scars are very deforming. According to Senear and Kink, hematoporphyrin is found in 17.5 per cent of the cases.

*Epidermolysis bullosa* is a congenital anomaly of the skin apparently due to absence of elastic fibers. It is one of the two diseases of the skin in which the essential lesion is a bulla, the other being pemphigus. The lesions of epidermolysis bullosa appear, as a rule, upon areas exposed to trauma and can be artificially produced by violent pinching of the skin. The affection gradually lessens in severity and has usually disappeared when adult life is reached. At times little milium-like

bodies are seen on the fingers and may cause dystrophic changes in the nails. Treatment consists simply in ordinary surgical care of denuded areas and in avoiding trauma.

The subject of *cutaneous indurations* in the newborn has long been a source of confusion, part of which is merely due to difference in nomenclature. The term "sclerema neonatorum" should be confined to infants with a generalized waxy, shrunk skin, extreme subnormal temperature followed in a few days by death. Such infants are small, often premature, while in other cases they are severely dehydrated following diarrhea.

In sharp contrast to the above mentioned affection (called *sclerema adiposum* by many continental writers) there is a benign type of induration in newly born infants which is more or less localized, though large areas may be affected. This has been called *subcutaneous fat necrosis* of the newborn. Possibly a better name is obstetric lipophagic granuloma, the fat tissue showing a granulomatous infiltration, often

following obstetric trauma. This affection is entirely benign and disappears spontaneously by the end of the third or fourth month without, as a rule, leaving any trace. While the disease is present the patients show no disturbance in temperature and gain normally in weight. The disease appears to be often due to trauma the infants being, as a rule, of good size and frequently born after difficult labor. At times unusually vigorous methods of resuscitation are thought to be of etiologic importance.

*Scleroderma* of new born infants is now known to be exceptionally rare. Many cases of subcutaneous fat necrosis were formerly described in the literature as scleroderma, but in such cases histologic examinations were not performed. Furthermore, scleroderma in adults never clears up in a few weeks or months as does fat necrosis. My interest in these types of subcutaneous induration is largely based on the opportunity of recently studying 5 cases of subcutaneous fat necrosis, 4 of them having been observed at the New York Nursery and Childs Hospital.

140 EAST 54TH STREET

### A BANNER HEALTH YEAR

The death rate in this state dropped to the lowest point on record, 11.2 per 1,000 population in 1933, according to the State Health Department. In particular, the mortality from whooping cough, diphtheria, tuberculosis, and pneumonia were never known to be lower.

Deaths from scarlet fever and diseases of the heart decreased from the previous year, while mortality from alcoholism was the lowest in eleven years and from suicide and homicide the lowest since 1929.

Automobile accidents resulted in fewer fatalities than in seven years. Fatal accidents in general were lower only once before.

Increases were noted, however, in maternal mortality and deaths from cancer, diabetes, and measles.

Diphtheria prevention work was more successful in 1933 than ever before, the department reported.

Thirty eight of the sixty seven cities and villages of more than 10,000 population, three more than the previous year, showed that 35 per cent or over of children under five years of age were immunized last January 1st. This per-

centage is considered necessary in order to protect a community against an outbreak.

Middletown in Sullivan county, again reported the highest percentage of children who were immunized—92 per cent.

Thirty one communities showed an increase in the percentage immunized as of last January 1st compared with the same day the previous year.

Communities reporting at least 35 per cent of children under five years of age immunized according to population:

100,000 to 250,000	Utica, Syracuse
50,000 to 100,000	Schenectady, Niagara Falls, Binghamton, New Rochelle
25,000 to 50,000	Newburgh, White Plains, Watertown, Auburn, Kingston, Poughkeepsie, Amsterdam
10,000 to 25,000	Middletown, Johnson City, Ithaca, Endicott, Ogdensburg, Port Jervis, Lackawanna, Hudson, North Tonawanda, Oneida, Geneva, Herkimer, Ossining, Little Falls, Peekskill, Tonawanda, Freeport, Port Chester, Lockport, Beacon, Cohoes, Johnstown, Corning, Mamaroneck, Rockville Center

The New York City Board of Health reports the lowest death rate in the history of the city, 10.23 per 1,000 population, in 1933. The largest number of deaths, 18,667 out of 75,153 total, were due to diseases of the heart. Cancer followed with 8,929, then pneumonia,

7,679, tuberculosis, 4,057, Bright's disease, 3,639, and accidents, 4,234. The infant mortality rate was 53.2 per 1,000 births, an increase over 1932, when the rate was 50.91. Maternal mortality increased to 6.41 per 1,000 live births as against 6.09 in 1932 and 5.29 in 1928.

# THE DIAGNOSIS AND TREATMENT OF TWO HUNDRED AND TWENTY-FOUR CASES OF GASTRO-INTESTINAL ALLERGY

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Brooklyn, N. Y.

A more intimate knowledge of gastro-intestinal allergy would save many a needless operation and a diagnosis of gastric neurosis with its concomitant life-long tragic suffering. Since there are so many doctors of more than twenty-five years in practice, experienced in allergy of the respiratory tract, *i.e.*, hay-fever and asthma, and yet who have never made a diagnosis of gastro-intestinal allergy, the question arises is there such a disease? The observations recorded in this paper, made from 224 office patients who have been under my care for the last eight years, answer this question in the affirmative. While allergy of the respiratory system, such as hay-fever and asthma, is frequently recognized, allergy of the gastro-intestinal tract is comparatively rarely diagnosed by the rank and file of our profession. Yet in my experience the latter condition is much more frequent than the former. These patients cannot be relieved except along anti-allergic lines. The difficulty lies in the fact that there are no pathognomonic symptoms or signs in gastro-intestinal allergy. Similar symptoms may arise from various gastric disturbances such as ulcers, gall-bladder disease, appendix, the various neuroses, etc.

## HISTORY

The patient's history is of greater help in recognizing gastro-intestinal allergy than any other single procedure.

TABLE I

Females: Number of positive allergic family history 100, or 72.5 per cent.

Males: Number of positive allergic family history 53, or 61 per cent.

The reason why there is a greater positive allergic family history in the females than in the males is, I believe, because they remember the family history better. Sometimes the only positive allergic history to be obtained is in a grandparent and frequently only in an offspring. Neither of these sources of information should be ignored.

Allergy rarely manifests itself in a single organ or tract<sup>1</sup>; in other words, if the patient is observed long enough, he will reveal not only gastro-intestinal symptoms

but other allergic manifestations of the skin, respiratory, genito-urinary and nervous system, such as migraine, etc. Other allergic manifestations in our group are shown in Table II.

It is observed that the most frequent association was allergy of the skin and then came asthma.

The vegetative nervous system plays a most important rôle in allergy<sup>2</sup> and it is rarely that only a single branch is involved; the other branches and the organs supplied by them soon become implicated.

TABLE II

Diagnosis	Totals
Allergy of gastro-intestinal tract.....	224
Allergy of skin.....	156
Asthma .....	68
Hay-fever .....	50
Migraine .....	42
Allergy of genito-urinary tract.....	15
Allergic arthritis .....	16

It is of great importance to obtain a history that certain foods or emanations are responsible for the symptoms. This is exceedingly difficult even when attention is drawn to it. Yet many patients will tell you that shellfish causes vomiting, meats diarrhea, white potatoes heartburn, bacon and eggs invariably give rise to "appendicitis." Oak pollen was responsible for abdominal pain, cramps, and indigestion, which were relieved completely by specific immunization therapy. Upon repeated observation, house dusting gave rise not only to eczema, but also nausea, gas, abdominal pain, and indigestion.

Very frequently the same article of diet will not only be responsible for gastro-intestinal allergy but involve other tracts as well, giving rise to rhinitis, coughs, asthma, hives, migraine, etc. Often a patient has a strong dislike for a certain food and gives a bizarre reason, "as I am not accustomed to eat it," etc., whereas the true reason is because he is allergic and is made mildly sick by it. I find that these patients who omit breakfast are frequently allergic to breakfast foods. When a patient can eat food prepared only in a certain way and when a certain food acts on the bowel, heart, etc. (milk acts as a cathartic, eggs cause palpitation), one should be on the lookout for allergy—as for example, "raw

milk makes me sick but not boiled or sour"

"a hard-boiled egg agrees but not soft-boiled or raw" "I cannot eat cabbage but I can take sauerkraut" Another help in the history is where self-imposed fasting improves symptoms. At times one hears "I have inherited a bad digestive system," very frequently this was allergy of the gastro intestinal tract. I have come across such a family of six members, although the allergy was not confined exclusively to the gastro intestinal tract. A history of anaphylactic shock after serum injection is not infrequently obtained.

When the digestive symptoms make their appearance, only on a certain day in the week and sometimes only on certain hours, allergy should be thought of. This is very frequently associated with a religious or racial custom as when the Catholic becomes ill only on Friday due to fish and the Jew on Saturday morning after the feast late the night before. A history of drug rashes is not infrequently obtained in these cases especially after salicylates, cinchophen, iodine, bromides, belladonna, etc. A change in weather gives these patients not only pains in limbs attributed to rheumatism but makes them melancholic and depressed in general.

One should be on the lookout for an allergic explanation of existing symptoms when a history of repeated attacks of exanthemata is obtained, especially in grown-ups. Usually these are the misinterpretations of the associated allergy of the skin which as we see from Table II, is the most frequent combination of gastro-intestinal allergy.

TABLE III—HISTORY OF EXANTHEMATA

Diseases	No of Cases
Measles	101
Scarlet fever	32
Miscellaneous	25
Chickenpox	23
Rubella	5
Total	186

Mumps is a frequent occurrence in the history of our series. There were 32 such cases. I wonder whether mumps, damaging the gonads, deranges the endocrines which appear to participate in allergy.

Whooping cough seems to be a frequent occurrence, 57 cases gave such a history. I know that in some of these cases the diagnosis of whooping cough was in reality an allergy of the respiratory tract.

A history of the diseases shown in Table IV was obtained from our patients

Allergic patients are frequently subjected to needless and nonbeneficial operations of

TABLE IV

Previous history	Total
Pneumonia	24
Diphtheria	17
Tonsillitis	16
Typhoid	15
Colds	15
Rheumatism	14
Influenza	12
Diarrhea	8
Nervous breakdown	7
Stomach trouble	6
Gonorrhea	6
Malaria	5
Heart disease	5
Chorea	4
Pleurisy	4
Syphilis	3
Boils	3
Vomiting	3
Jaundice	2
Croup	2
Cerebrospinal meningitis	2
Deafness	2
Appendicitis	2
Sun stroke	1
Rickets	1
Neuralgia	1
Hysteria	1

all sorts.<sup>3</sup> This history is frequently a help in making the correct diagnosis. The symptoms caused by the ingestion of allergens simulate very closely appendicitis, gallbladder disease, ulcers, etc., and frequently lead to needless surgery. Nose and throat operations are so frequent that they should be considered a symptom of the disease.

TABLE OF PREVIOUS OPERATIONS

Cases	Operations
Tonsillectomy	82
No operations	51
Sinus operations	29
Miscellaneous operations	25
Adenoidectomy	17
	11
	11
	8
	8
Calbladder	4
Hernia	2
Nephrectomy	2
Thyroidectomy	2
Proctectomy	2
Gastric ulcer	1
Prostatectomy	1
Mastoidectomy	1
Totals	255

## SYMPTOMS

This disease occurs mainly in the chronic form, and to a lesser extent in the acute form. In both instances it may be mild, moderate, severe, continuous, intermittent, immediate, delayed, or cumulative. I believe the symptomatology may be best conveyed by citing actual cases illustrative of the various forms. Between the mild and severe cases in both the acute and the chronic are numerous intermediate forms of varying severity.

(1) MILD ACUTE—In mild acute allergy the patient is perfectly well with the

exception that upon eating certain articles of diet such as shell fish, strawberries, etc., he gets distress, gas, nausea, abdominal fullness, constipation or diarrhea. These are usually associated with skin manifestations as hives, rashes, etc. He knows that certain foods give him indigestion. With the exception of positive skin tests and rarely eosinophilia all investigations are negative.

*Comment.*—Cure is readily obtained by avoiding the interdicted article of food.

(2) SEVERE ACUTE.—F.S., female, age 23, with a previous history of attacks of measles, chickenpox, sore throat, mumps, tonsillectomy, and adenoidectomy, had a strong family history of allergy. She had been suffering for years from repeated attacks of singultus, coated tongue, bitterness, epigastric tenderness, nausea, gas, belching, abdominal distress, cramps, constipation, diarrhea, severe backache, headache, dizziness, nervousness, insomnia, pains in extremities, rhinitis, dry cough, dyspnea, palpitation, and extensive rashes of various kinds all over the body, frequency and dysuria, and irregular menstruation. The above symptoms came on in definite attacks, only after the ingestion of certain foods; in the intervals the patient was perfectly well while under the allergic régime. After a heavy meal of delicatessen composed of corned beef, pastrami, etc., the patient had a marked aggravation of the above symptoms, appeared acutely ill, temperature 105° F., pulse 120, with a marked diffuse abdominal tenderness over the lower half of the abdomen (no rigidity over McBurney's point or gallbladder), the leukocyte count was 31,000, polymorphonuclears 88, eosinophiles 1, small lymphocytes 9, large lymphocytes 2. With the exception of a secondary anemia and strongly positive skin tests, all other investigations were negative. This performance was repeated again and again.

*Comment.*—In acute allergy, as a rule, the temperature elevation, leukocytosis, and polymorphonucleosis are absent; the eosinophilia occasionally may be present. These patients frequently undergo needless surgery. This patient has been under the author's observation for the last eight years and nothing but food allergy was the final diagnosis.

(3) MILD CHRONIC.—F.V., male, age 35; previous history: nose operations and appendectomy. Family history: mother had

essential hypertension. The patient was suffering for years from gas, belching, constipation, sour taste, headache, exhaustion, colds and "catarrh" in the summer time. Skin is raw and rough, knows that cabbage gives a bitterness, constipation, and headache, onions indigestion, pie gas, etc. With the exception of positive skin tests, complete x-ray examinations of teeth and gastro-intestinal tract (which showed an overactive colon), gonorrhea complement fixation test, and Wassermann were negative.

*Comment.*—Patient was completely cured not by the appendectomy but by anti-allergic treatment.

(4) SEVERE CHRONIC.—N.M., age 49, female, previous history: hysterectomy, influenza, pneumonia, measles, and mumps. Family history: definite allergy. Patient was sick since the age of eighteen. She suffers tremendous distention, gas, eructations, severe abdominal pain, cramps, obstipation, perspires freely, severe backache, listlessness, depression, dizziness, nervousness, insomnia, weakness, precordial pain, cries, suicidal tendencies, dyspnea and palpitation, has intense itching all over body, anosmia and sterility; refused repeated operations. All teeth extracted with no relief. Knows that certain foods gave rise to the above symptoms. Physical examination was negative, skin tests positive, basal metabolism minus six, x-rays of gastro-intestinal tract and chest were negative, gonorrhea fixation and Wassermann tests, urine, gastric analysis and feces were all negative; complete blood with the exception of a secondary anemia was entirely negative.

*Comment.*—Extensive allergic involvement of nearly all tracts, complete cure of this life-long severe illness was made possible only under the allergic régime.

Symptoms presented by our 224 cases. (Table V).

#### COMMENTS ON SYMPTOMS

The longer these patients are under observation, the more symptoms they present; hence, when the time element is eliminated from the statistics, the frequency of the various symptoms presented is not constant and will vary with different observers.

Herpes labialis is a frequent allergic manifestation. I wonder whether the same lesion occurring in the gastric and duodenal mucosa and its subsequent digestion

by the gastric juice is not responsible for peptic ulcer!

TABLE V

Gastro-intestinal Symptoms

Constipation	113
Gas in bowels	112
Belching	91
Nausea	90
Vomiting	80
Indigestion	76
Dysentery	54
Bad taste	51
Anorexia	42
Heavy breath	32
Coated tongue	30
Herpes labialis	15
Mucous colitis	10
Rectal bleeding	9
Boutillonia	9
Salivation	8
Dryness of mouth	6
Hiccough	6
Hemorrhoids	4
Epigastric heaviness	4
Bleeding gums	4
Tongue-burning itching blisters	3
Pruritis ani	3
Itching mouth	2
Cullapse	2
Fissure of anus	1

Pain and soreness in

Epigastrium	64
Abdominal pain	47
Cramps	38
Lower part of abdomen	14
Appendicular pain	11
Upper right quadrant	6
Sternal pain	4
Upper left quadrant	3
Colon & soreness	3
Ulcer type of pain	1

General Symptoms

Skin rashes eczema hives etc	163
Nervousness	125
Headaches	116
Cardiac symptoms	104
Gen to urinary symptoms	89
Weakness	81
Dizziness	72
Insomnia	60
Backache	59
Skeletal pains	47
Irritability	39
Peraspiration	33
Vascular symptoms	30
Cries	24
Chills	24
Fatigues	24
Joints—pain	24
Mental dullness	24
Hoarseness	22
Endocrine	18
Epistaxis	18
Eyes—itching burning tearing	17
General aching	16
Noises in ears	15
Yawns	12
Obesity	11
Glebas	9
Subcutaneous hemorrhage	9
Fears	9
Dreams	8
Convulsions	6
Fever	5
Deafness	5
Anosmia	5
Hemoptysis	5
Neuritis	3

A very stubborn condition of unknown and dubious etiology is the coated tongue the itching soreness and rashes at the roof of the mouth the bitterness and soreness of tongue. This is frequently of allergic origin and may come on before the patient is finished with his meal or sometime after. To observe the miraculous disappearance of

this stubborn condition under the elimination of the specific allergen, after defying all alterations of dental appliances, is a gratifying result.

I have repeatedly observed constipation and obstipation caused by allergic foods. A mother noted repeatedly that oatmeal invariably caused constipation. Another woman with a life long history of obstipation and symptoms resembling duodenal ulcer with rashes, etc., all vanished under four days anti-allergic treatment and remained so permanently. Intestinal obstruction may be caused by angioneurotic edema of allergic origin. The writer knows of one such case that was actually observed on the operating table.

Eleven ulcer cases<sup>4</sup> could not be cured by the Sippy or any other method, but gave an instantaneous response to the anti-allergic regime. The same held good with seven gallbladder cases. The writer wonders how many ulcer and gallbladder cases have an allergic etiology!

The relation to essential hypertension and allergy is discussed elsewhere.<sup>5</sup>

Bleeding from the various mucous membranes,<sup>6</sup> nose mouth stomach, rectum, genito-urinary, and subcutaneous is a frequent manifestation of allergy (see Table VI). It may be macroscopic and extensive but is usually microscopic. Since capillary hemorrhage is one of the most frequent findings of allergy, this is to be expected.

Very frequently allergic symptoms can be reproduced by the ingestion of the suspected article of diet. Then it has diagnostic importance. If it is negative, it does not rule out allergy.

Backache frequently exceedingly severe and stubborn was present in 59 cases. The exact explanation is not clear to me. All of them were greatly helped by the anti-allergic regime.

The nose and sinuses are a frequent site of various allergic manifestations such as clogged nose pain rhinitis cloudy sinuses etc., and are not benefited by operations.

Overdoses of pollen inoculation for asthma and hay fever will frequently give rise not only to symptoms referable to the respiratory tract but also to gastrointestinal symptoms. The allergin undoubtedly causes an overactivity of one or more branches of the vagus, causing contractions of muscle secretions, and vascularity and if widespread it will cause shock.

Not only do all kinds of rashes result from allergy but pruritus is frequently a

localized allergy of the skin. The nervous manifestations are a conspicuous symptom in this disease and are often of diagnostic value. Tinnitus, dizziness, vertigo, and deafness are frequently of allergic origin.

TABLE VI.—COMPLETE DIAGNOSIS OF OUR CASES  
IN ADDITION TO ALLERGY

<i>Endocrine:</i>	
Miscellaneous .....	30
Hypothyroid .....	20
Obesity .....	20
Goiter .....	18
Hyperthyroid .....	17
Menopause .....	7
Sterility .....	4
Undescended testicles .....	1
Hypertension .....	18
Infected teeth .....	12
Ulcer—gastric and duodenal.....	11
Hemorrhoids .....	11
<i>Heart disease:</i>	
Muscle .....	10
Valves .....	6
Rhythm .....	3
Aorta .....	1
<i>Other diseases:</i>	
Varicose veins .....	9
Cholecystitis .....	6
Nephrolithiasis .....	4
Grand mal .....	4
Tuberculosis of lung .....	4
Chorea .....	4
Fissure of anus .....	3
Visceroptosis .....	3
Neuritis .....	3
Deafness .....	3
Gonorrhea .....	3
Nasal polyp .....	2
Appendicitis .....	2
Nephritis .....	2
Enuresis .....	2
Encephalitis .....	2
Tonsils .....	2
Hernia .....	2
Diabetes .....	2
Pelvic inflammation .....	2
Diverticuli, intestinal .....	1
Cholelithiasis .....	1
Varicocele .....	1
Gout .....	1
Ménière's disease .....	1
Coccygodynia .....	1
Malaria .....	1
Hammer finger .....	1
Kerata conus .....	1
Double ureter .....	1
Flatfeet .....	1
Stricture of ureter .....	1
Psychoneurosis .....	1
Retinitis pigmentosa .....	1
Pyelitis .....	1
Supermammary .....	1
Infected ear .....	1
Hypoglycemia .....	1

#### ENDOCRINES

The writer believes that the endocrine glands play an important rôle in all forms of allergy. Mumps is a frequent history in this disease. That mumps frequently damages the gonads is well known. The damaged gonads involve the remaining endocrines, the thyroid especially seems to be the particular gland disturbed. In our series endocrine disturbance was found in 95 females, or 70 per cent, in 28 males, or 31 per cent. These cases showed a definite endocrine involvement. The preponderance of females over males is to be expected, as I find endocrine disturbance in

general more frequent in the female.

Menstrual disturbances of all forms were frequent symptoms. Many of them showed

TABLE VII.—BASAL METABOLISM

Female	No. cases	Male	No. cases
Plus .....	45	Plus .....	2
Minus .....	21	Minus .....	14
Normal .....	21	Normal .....	2
<i>Females</i>		<i>Males</i>	
11 gave a minus	2 to 10	6 gave a minus	2 to 10
10 gave a minus	11 to 43	8 gave a minus	11 to 37
<i>Females</i>		<i>Males</i>	
24 gave a plus,	1 to 10	2 gave a plus,	14 to 39
21 gave a plus,	10 to 119		

a leukorrhea of allergic origin. Sterility was not infrequent. The gastro-intestinal symptoms were not of an endocrine origin; for it is well known that the endocrine glands and the thyroid in particular will give rise to various gastro-intestinal symptoms. This was proven by the fact that specific endocrine therapy alone did not eradicate the condition. It was only when the allergic régime was instituted that positive and permanent results were obtained.

TABLE VIII.—UNDERWEIGHT

Sex	No. cases	Average number, lb.	Number, normal weight
Male .....	35	12 2/7	14
Female .....	78	13 19/39	29
Total both sexes.....	113	13 13/113	43
<i>OVERWEIGHT</i>			
Males .....	30	27 4/5	
Females .....	47	28 15/47	
Total both sexes.....	77	28 9/77	

*Comment.*—One of the first signs of improvement is the rapid gain in weight of these patients under allergic treatment. The average allergic patient is more frequently underweight than overweight.

Gastro-intestinal allergy occurs at all ages.

#### SKIN TESTS

While practically every allergic patient responded with positive skin tests (the various allergins are too numerous to mention) in only about 50 per cent of the tests are the results dependable. By this I mean that frequently a skin test will be positive and the patient will be able to eat that food with impunity and conversely the skin test will be negative and the patient be poisoned by that particular food. Therefore the patient's own experience with a particular food forms the best and only guide to go by. The foods the writer found patients most sensitive to were the following in order of frequency: wheat, eggs, milk, cocoa, cabbage, orange, white potato, beans



and peas, veal and pork in the meats were especially allergic

#### BLOOD TESTS

It is an error to expect an eosinophilia in every case of allergy. By far the greater

to establish the diagnosis of allergy. The therapeutic tests were most valuable as a diagnostic aid. Where all previous efforts failed, and the anti-allergic treatment was followed by prompt relief of all symptoms,

TABLE IX

Age in years	1	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	20
Females	1	2				1	3	1	1	1	2	1		3	1	1	4	3
Males			3	1	1								1					1
Age	21	23	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Females	5	6	5	1	7	2	5	4	1	3	4	4	2	2	4	3	6	2
Males	2				1	2	3	4	1	4	1	4	2	7	2	3	1	
Age	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	59
Females	3	6	1	1	1	4	1	5	1	2	3	5	3			4	3	1
Males	5	2	3	1	2	1	3		2	5	1	3		1	1		1	
Age	61	63	63	65	66													
Females	1	22	1	1	1													
Males			1															
Age																		
Infants	1																	
1-20	16																	
20-63	68																	
Average age																		
Average age																		
Average age																		
Average age																		

number of patients do not show it neither during the active nor the quiescent stage. In our series there were positive eosinophilia from 4 to 22 per cent in 52 cases, 148 cases did not show eosinophilia.

The white blood count frequently showed a lymphocytosis, the total leukocyte count was, as a rule, normal, with few exceptions it showed a leukocytosis.

The red blood count frequently showed an anemia of the secondary type. In our series 65 patients showed an anemia of moderate severity while 137 showed no anemia. Can the anemia have as a basis the malnutrition and endocrine disturbance? Both are factors in this disease.

The gonorrhea complement fixation and Wassermann tests were performed upon 201 patients with only one single positive case for syphilis and 2 positive for gonorrhea. Evidently syphilis and gonorrhea are not factors in this disease.

#### GASTRIC ANALYSIS

With the exception of occult blood in 13 cases the rest of the findings were negative. As has been demonstrated elsewhere,<sup>8</sup> capillary hemorrhage is a frequent finding in allergy.

Four patients showed blood in feces, other findings were negative.

#### URINE TESTS

Traces of albumin, a few red and white blood cells were frequent findings upon repeated examination. All other findings were negative.

*Comment*—In the exceptional case where pathology was found upon x-ray examination double precautions were taken

and where this was corroborated by history and other associated allergic conditions, skin tests, etc., x-ray was deemed superfluous.

TABLE X—X RAYS

Gastro-intestinal Series	No Cases
Negative	39
Ulcer, gastric and duodenal	9
Spastic colon	8
Adhesions	4
Visceropitosis	2
Colitis	1
Hypermotility	1
Overactive colon	1
Rapid emptying time	1
Diverticuli and spastic colon	1
Pyloric spasm and incomplete cecal valve	1
Chest	
Negative	41
Tuberculosis	3
Small heart	1
Pleuritis	1
Bronchitis	1
Dilated aorta	1
Hypertrophy of heart and retrosternal thyroid	1
Gallbladder	
Negative	38
Cholelithiasis	2
Cholecystitis	1
Adhesions	1
Kidney	
Negative	7
Stricture of ureter	1
Double ureter and renal calculus	1
Skull	
Negative	9
Calcified pituitary	1
Deep sella turcica	1
Teeth	
Negative	19
Infected teeth	12
Joints	
Negative	2
Sinus	
Negative	6

#### DIFFERENTIAL DIAGNOSIS

In the differential diagnosis all points which have been brought out under history are of the greatest help. To differentiate from the inflammatory abdominal conditions we have, as a rule, absence of, or very slight, temperature, occasionally a

subnormal temperature may be present. Exactly the same rule holds good with the leukocyte count; as a rule, there is no elevation, or if present, it is slight, and there may be a leukopenia. Instead of a polymorphonucleosis there is, as a rule, a normal differential or a relative lymphocytosis. To depend upon the eosinophilia for a differential diagnosis is a mistake; it is too seldom found. Only a positive finding is of value; a negative finding has no value.

As a rule, other forms of allergy coexist, especially the cutaneous form, and very often if one looks for it, it may be objectively demonstrated at the time. As a rule, there are present not only symptoms referable to the digestive tract, but also symptoms referable to the nervous system, which frequently dominate and mask the picture. One can frequently reproduce the symptoms by exposure or ingestion of the suspected allergin, although the psychic character of the disease must be borne in mind. I have discussed elsewhere the differentiation from appendicitis.<sup>9</sup> The absence of muscular rigidity is of great help. The negative cholecystography, the absence of duodenal drainage findings indicative of gallbladder disease points to the correct diagnosis. In peptic ulcers the x-ray is of great help. Intestinal obstruction, hypoadrenalism which may simulate it very closely, and even perforation of a viscus, as well as all the ones previously mentioned, may be differentiated by injecting hypodermically adrenalin which will clear it up, if of allergic origin. Allergic elimination diets promptly relieve all forms of gastro-intestinal allergy and exclude organic disease. Let allergy be not your first but your last diagnosis.

#### PROGNOSIS

When the allergin can be identified in the manner described, the prognosis is splendid. It is certainly wonderful to see a patient after a life-long suffering frequently unrelieved by operation, promptly and fully recover when the specific allergins are eliminated. To identify the latter is not always easy. Fatal cases have been reported. One hears very often about "out-growing" this disease, but sees very little of it, although the allergin may change.

#### TREATMENT

PROPHYLAXIS.—These patients, as a rule, have an unstable nervous system, and the vagus sympathetic tone is easily disturbed. Therefore overexertion and ex-

cesses of all kinds are interdicted. Mental worries, aggravations, and depressions must be avoided as much as possible. The suspected allergin must be avoided. With foods this is very simple; substitutes can be easily found. When this is impossible or where pollens, dust, or other emanations which are impossible to eliminate exist, desensitization or immunization must be undertaken. It is wise to take general precautions which have been found of aid in other forms of allergy and to interdict sleeping on hair mattresses, feather pillows, overeating, exposure to dust, heat, cold, etc. I find that hydrotherapy is very useful, especially the warm sea-salt baths.

ACTIVE TREATMENT.—The principle is to eliminate the foods found responsible for the symptoms and to substitute others that do not give reactions. The anti-allergic elimination diet first proposed by Albert H. Rowe<sup>10</sup> is of great help and robs the treatment of all its severity. This can be readily modified to suit the individual case. Another good way of starting treatment is to starve the patient for twenty-four hours then start in on one or two foods which you know agree with the patient and never give rise to symptoms. Add one new article of food every twenty-four to forty-eight hours. Eliminate the article of diet immediately upon the first sign of trouble. It is best to give rare foods and those which experience have proven give the smallest percentage of positive allergic reactions. Such foods the writer has found to be rice, corn and its products, egg plant, lettuce, spinach, endives, carrots, turnips, lemon, prunes, rhubarb, gelatine, molasses, sugar, coffee, parsley, salt, lamb, ripe olives, pineapples, mulberries, artichoke, sweet potato, tea, and figs. The foods which give rise to most allergic reactions the writer has found to be eggs, wheat, milk, cocoa, cabbage, orange, white potato, beans, and peas, in the order named. If a food is found to disagree it should not only be avoided; even the smallest quantity incorporated with another food should not be taken. As a rule, improvement will be noticed immediately or sometimes not before three or four days. After three or four months of abstaining from the specific allergin, if it is deemed desirable the patient may be desensitized by mouth against the specific food by beginning with the most minute quantity and daily gradually increasing the amount until a fairly large quantity can be

taken Occasionally one meets a patient who cannot tolerate the smallest particle of the offending allergin It is then advisable to omit the food entirely The various drug and biologic houses prepare food allergins for hypodermic injections, which yield very satisfactory results With these products, treatment according to given directions may be started at once

Feeding the patients peptone one hour before meals in the writer's hands has yielded no results Denaturation of food by prolonged heating gave poor results Very often severe vomiting will continue even after the specific allergin is eliminated and may become so severe that even water will not be tolerated by the stomach This is due to an acidosis, loss of chloride, or dehydration, or to their combination The usual treatment for this condition must be instituted before attempting anti-allergic treatment It is very gratifying to see how these undernourished patients gain markedly in weight as soon as the specific allergin is eliminated

The writer has found that tincture of belladonna in one-half glass of water fifteen minutes before meals, the dose steadily increased until physiological effects are obtained (beginning dryness in mouth, blurring of vision, etc.), and then maintained at that dose, is a decided help in these cases It is surprising what tremendous doses most of these cases will tolerate Auto-hemotherapy of 10 cc of whole blood gradually increased to 20 cc, given every other day for ten injections, is in some cases a help Viosterol is useful Other drugs in the order of usefulness are injections of 1 per cent flowers of sulphur in olive oil, luminal, iodides, dilute hydrochloric acid, calcium gluconate, pilocarpine, arsenic, salicylates, vaccines, and pollens, wherever indicated In some cases diathermy and ultraviolet rays are of decided aid For the acute symptoms 10 to 15 minims of adrenalin by hypodermic is the drug of choice and repeated as frequently as indicated In severe cases the treatment should be that of shock, adrenalin, ephedrine, caffeine, camphor in oil, etc The endocrine glands by themselves do not cure the disease—they are of great help where indicated It is the elimination of specific allergin which is of the greatest help

Where other pathology coexists, as gall-bladder disease, appendicitis, peptic ulcer, etc., along with the specific treatment for the disease in question, the anti-allergic

regime should be incorporated The writer believes when a needless operation is performed on an allergic patient and this is followed for a variable length of time by improvement, the benefit derived is similar to the improvement following intravenous vaccine therapy mainly shock treatment, brought on by biologic insult

RESULTS OBTAINED—Males, splendid results in 74 doubtful in 11 Females, splendid results in 134, doubtful in 8 Results were held doubtful where observation was too short to justify conclusions of permanency of benefit

#### SUMMARY

- 1 Gastro intestinal allergy is rarely recognized, yet it is more frequent than asthma and hay fever combined
- 2 There are no pathognomonic signs or symptoms
- 3 The history is of the greatest help in the diagnosis and treatment
- 4 The disease is nearly always associated with other allergic manifestations especially of the skin, which is frequently mistaken for exanthema
- 5 Bleeding from mucous membranes and subcutaneously is often of allergic origin
- 6 Nose and sinus manifestations are frequently associated with allergy
- 7 The nervous symptoms often dominate the clinical picture
- 8 The vegetative nervous system frequently plays an important role
- 9 Endocrine glands are intimately associated with allergy
- 10 The occurrence and digestion of intragastric herpes are responsible for peptic ulcer
- 11 Skin tests are dependable in only 50 per cent of the cases
- 12 The gastric analysis and x ray examinations, as a rule, show negative findings
- 13 Eosinophilia is exceptionally present
- 14 Futile surgery is frequent
- 15 The elimination of the specific allergins yields gratifying results

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# Symposium on Syphilis

## PREVENTION OF CONGENITAL SYPHILIS

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### INTRODUCTION

The tragedy of syphilis is most apparent in the case of children whom we denominate as congenital syphilitics and for whose stigma several groups in the community share the responsibility. Various studies have been made relative to the incidence of prenatal syphilis as well as of congenital syphilis, but there are still a number of matters that need to be clarified on the basis of additional data. Recent figures, obtained from twenty-six hospitals in New York City in which routine blood tests are done on all prenatal clinic cases, indicate a range of from less than 1 per cent to 19 per cent of prenatal cases with positive serological findings. The higher figures were found in clinics which serve a comparatively large percentage of Negro women. No comparable figures are at present available to any extent relating to the incidence of congenital syphilis. Stokes claims that congenital syphilis is present in from 3 to 4 per cent of the living children of our city populations. Studies in Boston, St. Louis, and elsewhere seem to agree with this estimate, though higher figures have been indicated for Negro children in the South. It is quite apparent that the paucity of reliable data and the failure adequately to disseminate, among lay and professional groups, such information as is available may, in part at least, be responsible for the lack of vigorous action by the medical profession and others in taking measures to stem constantly recurring cases of congenital syphilis.

The prevention of congenital syphilis is necessarily part and parcel of the problem of adequate treatment of cases of prenatal syphilis. While there is no cavil about this causal relationship, there is, nevertheless, much that remains undone in medical institutions, and possibly among private practitioners as well, to check syphilis among pregnant women, so that their children might be born free of the parental taint.

In order to obtain an appraisal of the present situation insofar as the treatment of prenatal cases of syphilis is concerned, as well as to determine what are common procedures in such treatment, a study was recently instituted of the records of seven hospitals in New York City and covering 653 cases of prenatal syphilis. In this study, in which the hospitals are referred to by letter, information was sought relating to the month of pregnancy on admission to the clinic; blood test findings; number of treatments given; blood retests and findings; date of delivery and where delivered; condition of mother and of baby after delivery; accidents of pregnancy; prematurity and stillbirths; cause of death of mother or child; age at death; condition upon discharge from hospital, both of mother and child; result of blood test on child; diagnosis on postpartum visits to clinic and treatment instituted; visits of baby to clinic, including condition; record of previous pregnancies and results; findings on serological tests of other children in same families; and findings on such tests of husbands.

The distribution of cases by color shows a disproportionate number of Negro women registered among those studied. Comparative figures which are available indicate that the prevalence of syphilis, as measured by a positive serological reaction, among Negro pregnant women who attend prenatal clinics in New York City, is at least three times as high as that among white women attending similar clinics; and fifteen or more times as high as that among women in similar clinics in certain areas of the City. This situation points to one of the unfilled needs in the community health program.

It may not be amiss to indicate at this point that the incompleteness of clinic records seriously interfered with the comprehensiveness of the present study; and it warrants the suggestion that those in positions of responsibility would render a

real service by seeing to it that the records of prenatal syphilitics are carefully and completely filled out

is markedly overcrowded and understaffed in several departments

The number of treatments for prenatal

TABLE I—AGE DISTRIBUTION

Age	A	B	C	D	E	F	G	Total	P C
15-19 years	18	16	6	5	31	3	7	86	13.4
20-24 years	60	30	26	15	84	18	12	245	38.2
25-29 years	44	29	13	8	57	7	5	165	25.7
30-34 years	30	7	7	4	31	8	6	93	14.5
35-39 years	14	12	8	1	11	2	1	48	7.5
40 and over	1				2	1		4	0.7
No record	1	3	2		5	1		12	
Totals	168	97	62	33	223	40	30	653	100.0

Table I notes that 13.4 per cent of the women were from 15 to 19 years of age, 38.2 per cent between 20 and 24 years of age, 25.7 per cent from 25 to 29 years of age, 14.5 per cent between 30 and 34 years, and 7.5 per cent between 35 and 39 years. These percentages are comparable to those pertaining in most areas of this country, though percentages for Negro women alone show a higher figure in the earlier age groups.

syphilis will naturally be influenced by the month of pregnancy in which the patient reports, and the regularity with which she returns for treatment. The end results will be further affected by the adequacy of the treatment given. Aside from the need of beginning treatment early in pregnancy, it has been empirically accepted that the woman receiving adequate treatment has a good chance of having a healthy child. In one of the hospitals studied, the

TABLE II—MONTH OF PREGNANCY ON ADMISSION

Month	A	B	C	D	E	F	G	Total	P C
1 month	2	1			2			5	0.8
2 months	13	1	3	1	3	1		22	3.4
3 months	20	7	12	3		3		47	7.4
4 months	28	8	11	3	1	2	5	69	10.9
5 months	36	21	9	4	30	4	4	108	17.0
6 months	37	19	7	5	45	7	2	172	19.2
7 months	25	15	9	5	64	9	6	133	21.0
8 months	5	16	7	4	45	11	7	95	15.0
9 months		6	2	4	18	1	2	33	5.3
No record	2	3	2	4	4	2		19	
Totals	168	97	62	33	223	40	30	653	100.0

It has been an axiom for some time that the earlier in the course of the pregnancy the antisyphilitic treatment is begun, the better the outlook for both mother and child. It has further been shown that for the treatment to be really effective, it must be started before the fifth month. From Table II it will be noted that, for the group as a whole, only 22.5 per cent of the patients were put under treatment before the fifth month, whereas the several institutions show a marked variation in their records. Hospital A, with 37.5 per cent under treatment before the fifth month of pregnancy, has a high standard of service, a good social service department, and the chiefs of service are known to take a special interest in the problems of prenatal and congenital syphilis. On the other hand, Hospital E, with only 7.8 per cent of the patients registered before the fifth month,

standard procedure is to give 9 injections of neosalvarsan, and if the Wassermann test remains positive, the treatment is continued. Of the patients reported upon in this study, 36.7 per cent received 5 treatments or less, and 56.3 per cent 9 treatments or less. The institution in which the treatments per patient were fewest in number was that in which facilities are most inadequate, with insufficient medical, nursing, and social service personnel.

The importance of repeated serological tests, particularly in the case of prenatal syphilitics, is generally recognized. If an appraisal is to be made on the basis of the records studied, it would appear that such tests were not repeated, for whatever reasons, in 356, or 55 per cent, of the cases. The variation between the seven institutions was extremely marked. Hospital A reported 151 out of 168 cases, or

90 per cent, with tests repeated, while the records of Hospital G indicated only one case out of 30 retested. The other five hospitals had a rather low record of achievement. Incidentally, of those women

is not given adequate attention. Hospital A, for instance, was able to report that out of the surviving children, 114, or 71.7 per cent, were brought to the clinic one or more times; Hospital E reported that all

TABLE III.—PREVIOUS PREGNANCIES

	A	B	C	D	E	F	G	Total	P. C.
Normal .....	56	51	37	14	80	19	9	266	62.0
Miscarriage .....	38	..	2	..	33	5	..	78	18.2
Stillbirth .....	13	19	2	..	35	9	8	85	19.8
None .....	55	22	20	15	54	4	11	181	....
No record .....	7	5	1	4	21	3	2	43	....
Totals.....	168	97	62	33	223	40	30	653	100.0

who were given a repeated test, 55 per cent were reported as either three plus or four plus, thus emphasizing the need for a check on the treatment administered.

In attempting to tabulate the accidents of pregnancy, some difficulty was encountered, as the records were incomplete in 182, or 28 per cent, of the cases. No recorded deaths of mothers occurred, though there were 6 cesarian deliveries; of the infants, there were 20 stillbirths, 13

surviving children were returned one or more times; whereas in Hospitals B and D there were no further examinations or treatments; and in Hospital G only one child out of 30 was recorded as having returned for observation and treatment. The failure to follow up and treat such children is indeed a matter of serious concern.

In analyzing the history of previous pregnancies in this series of 653 women,

TABLE IV.—RESULT OF SEROLOGICAL EXAMINATION OF HUSBAND

Blood test findings	A	B	C	D	E	F	G	Total	P. C.
Negative .....	61	2	29	..	45	1	..	138	71.8
Positive (2) .....	4	..	4	..	7	..	..	4	2.1
(3) .....	1	..	5	..	16	..	..	12	6.4
(4) .....	15	..	1	..	1	..	..	36	18.7
Doubtful .....	..	..	33	..	39	..	..	2	1.0
No record .....	87	95	23	..	154	39	30	461	....
Totals.....	168	97	62	33	223	40	30	653	100.0

premature births, 6 died shortly after birth, and 6 were reported as macerated. The rate for stillbirths, which was about 6 per cent, is comparable to that for a five-year period in the Borough of Manhattan. However, if the nonviable fetuses are included in the total picture, the percentage of loss mounts up much higher. It may be fair to assume that syphilis contributed a share to the increase.

Postpartum observation and treatment would necessarily be assumed to be highly important in the present series of cases, yet 270, or 42.8 per cent, did not return at all, and 147, or 22.5 per cent, came only once. The records at the seven hospitals varied widely in the number of patients who returned for further treatment.

The desirability of follow-up service and treatment for children born of syphilitic mothers hardly needs emphasis. Results, as indicated by a study of the records, would apparently warrant the conclusion that in some hospitals, at least, this matter

the records were found incomplete in 43 instances, and 181 were reported with no previous pregnancy. On the basis of the 429 women who had been pregnant one or more times, 78, or 18.2 per cent, gave a history of one or more miscarriages, and 85, or 19.8 per cent, one or more stillbirths; and a few gave histories of both. Thus, of the women who had prior pregnancies, 38 per cent at some time did not give birth to living children. If to this 38 per cent is added the loss in the pregnancies under study, a record of 46.6 per cent of the women in this series is noted with so-called accidents of pregnancy. This is indeed a high figure. The question that naturally arises is, how much of this loss is due directly to syphilis and how much to other causes. The presumption is undoubtedly warranted that pregnant women with syphilis are highly prone to accidents of pregnancy, and that, in addition, a fair proportion of their living children are apt to be congenital syphilitics.

Plans for the control of syphilis and the prevention of congenital syphilis would presume ordinary care in checking up the incidence of syphilis among living children, as well as among the husbands of syphilitic pregnant women. And yet, serological tests were made on children in only 84 of the families, and on but 192, or 29.5 per cent of the husbands.

The difficulties inherent in obtaining the necessary cooperation for the making of serological tests of children and husbands are well recognized. However, it should be noted that these presumed difficulties were apparently more real in some hospitals than in others. In Hospitals B, D, and G none of the living children of syphilitic mothers were examined. Likewise, in Hospitals B, D, F, and G, only one or two, or none of the husbands of these women were examined. It would, therefore, appear to be somewhat dependent upon institutional policy and procedure as to whether or not these necessary examinations are made.

#### SUMMARY

The preceding data are in necessarily abbreviated form, with much of the statistical information omitted. The more important findings in this study of 653 cases of prenatal syphilis in seven prenatal clinics in New York City are as follows:

(1) Only 22.5 per cent of these cases were put under treatment before the fifth month of pregnancy, though in one hospital a 37.5-per cent record was achieved.

(2) The antisymphilitic treatments administered to these women were possibly too few in number, as 36.7 per cent were given 5 treatments or less, and 56.3 per cent 9 treatments or less.

(3) In many instances blood tests were

not repeated, and when such retests were made, three-plus and four-plus findings were recorded in 169 instances, or 55 per cent; and negative in 85, or 28 per cent.

(4) Of the cases in which complete records were available, there were 426 normal births and 45 losses, including 20 stillbirths, 13 premature, 6 deaths immediately after birth, and 6 macerated cases.

(5) There were 304 recorded blood tests of the newly born children, and of these 242 gave negative reactions, and 51, or 16.7 per cent, strongly positive reactions. The value of such tests made shortly after birth has been seriously questioned.

(6) The record of postpartum visits to hospitals in which confinement took place shows that 42.8 per cent of the women failed to return and 22.5 per cent made only one visit.

(7) The record of visits of children born of these syphilitic mothers is comparatively high in one hospital with 71.7 per cent returning for at least one visit, and very low in other institutions studied.

(8) The records indicate that 46.6 per cent of the women studied had passed through a nonfruitful pregnancy; 38 per cent related to a prior pregnancy; and 8.6 per cent to the current pregnancies studied.

(9) Few living children of these mothers were given blood tests for syphilis.

(10) Only 192 husbands were given blood tests, and of these, 28.0 per cent were reported as positive for syphilis.

(11) More consideration as to procedures in caring for prenatal cases with syphilis would undoubtedly result in the saving of lives, in reducing various manifestations of late syphilis, and in preventing the blight of congenital syphilis from affecting many children in the community.

## DIAGNOSIS, IMPORTANCE, AND TREATMENT OF EARLY SYPHILIS

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By early syphilis is meant, roughly, the first two or three years of the disease; in other words, inoculation, first incubation period, the chancre stage or primary syphilis, the second incubation period, and finally, secondary syphilis. Early syphilis is important for two reasons: First, it is

during this period that the specific organisms are disseminated throughout the system and unless destroyed while accessible to lethal remedies they may produce inaccessible foci in the cerebrospinal system, the cardiovascular system, and various viscera which may subsequently give rise

to the serious lesions of late syphilis. It is in early syphilis, therefore, that one has the best opportunity to effect a cure and to prevent disastrous late results such as paresis, tabes, aneurism, and other well-known conditions. The incidence of syphilis is greatest in the third decade. The damaging manifestations of the disease are most common in the fifth and sixth decades. The diagnosis and adequate treatment of early syphilis will substantially reduce the morbidity and mortality of middle age.

The second reason for the importance of early syphilis is that many of the lesions are contagious. Unless the disease is quickly controlled the patient is a menace to society.

Inoculation usually occurs in the skin or in the orificial mucous membranes. The spirochetes remain in the immediate area only a few hours. Within a few days, even within twenty-four hours, the organisms may reach the lymphatics, blood, and viscera. Therefore, syphilis must be considered a systemic infection practically from the time of inoculation, and local prophylactic measures are useless unless applied immediately after inoculation. The chancre, which is the first clinical evidence of the disease, develops at the site of inoculation in from twelve days to about three weeks. Successful and unsuccessful attempts have been made to quickly cure the disease in humans during the early primary incubation period; that is, a few days after inoculation, by intensive treatment with arsphenamine. This method has not yet been standardized nor evaluated. In selected cases it seems justifiable. But when tried, the patient should be kept under observation for a year after one or two courses of intravenous arsphenamine injections.

When inoculation occurs in the usual manner; that is, in the skin or orificial mucosa, there is, as a rule, an orderly sequence of events. First, there is the primary incubation period already mentioned. Then the chancre develops at the site of inoculation. This is accompanied by a painless, palpable lymphatic gland in the immediate neighborhood. In a few weeks this is followed by slight constitutional symptoms, a positive blood serology, a roseola and other cutaneous manifestations of secondary syphilis. Exceptions are numerous and are of importance because they interfere with diagnosis.

Instead of the usual cutaneous inocula-

tion, the spirochetes may enter the blood stream directly, as occasionally occurs during blood transfusions. In such event the orderly sequence just referred to may not occur. The first manifestation of the disease may be a positive blood Wassermann reaction, or a macular exanthem, or an eruption more characteristic of the later secondary period, or even more definitely precocious eruptions. Another exception to the orderly sequence of events is seen in congenital syphilis of early type. Other exceptions are caused by inadequate treatment, variations in acquired immunity, and so on.

The typical genital chancre, with its hard induration, flat, slightly ulcerated surface, and rather slow evolution, is easily differentiated from other conditions. A typical primary lesions are more difficult to diagnose clinically. At one extreme the lesion may be so small that suspicion of its true nature is not aroused. At the other extreme, perhaps because of mixed infection, the lesion may consist of a large, deep ulcer with little or no induration, accompanied by a large, painful lymph node. Again, the initial lesion may be hidden in the vagina, urethra, throat, rectum, etc., and hence overlooked or incorrectly diagnosed.

The diagnosis of the chancre must be unequivocal. The clinical diagnosis must be confirmed by the microscope. The *Spirochaeta pallida* must be differentiated from other spiral organisms. It is often necessary to repeat the examination several times after applying a continuous saline wet dressing to the lesion for a day or two, before the organisms can be demonstrated. Serum should be obtained from within the lesion. Occasionally it is advisable to obtain serum from the satellite gland. At times, especially when the suspected lesion has been in existence for two or more weeks, it may be advisable to excise the enlarged lymph node, or the chancre, for histological examination. The point to be emphasized is that every accepted method should be used to verify or refute the suspicion of primary syphilis.

The blood serology should be obtained as soon as the patient comes under observation. It should be negative when the chancre first appears. It will be positive usually within two or three weeks subsequent to the development of the primary lesion, although it may be delayed for several weeks longer. When the diagnosis



has been missed in the primary stage, one should, in the writer's opinion, wait for a four-plus Wassermann reaction, which usually occurs before eruptions develop, rather than depend entirely on the less conventional serological tests, or on cutaneous manifestations. Also, it is advisable to send specimens of blood to two laboratories simultaneously.

While syphilis is constitutional from the beginning, the so-called secondary phase of the disease begins a few weeks after the appearance of the chancre—after the second incubation period. The first detectable evidence of secondary syphilis may be malaise, anemia and general adenitis, or a positive blood serology, or an eruption, or a combination of these features. A positive blood serology, in untreated cases, is almost certain to occur and is reasonably dependable. The other features, alone, are not so dependable because they may not occur, they may be overlooked, or they may be mistaken for some other condition. Therefore, in untreated cases, a four-plus positive blood Wassermann reaction is deemed essential for the absolutely certain diagnosis of untreated early secondary syphilis, unless there are lesions such as mucous patches or moist papules in which *Spirochaeta pallida* can be demonstrated.

Secondary cutaneous syphilis has certain fairly definite and well-known characteristics. When the eruption occurs very early—from four to six weeks after the appearance of the chancre—it consists usually of a generalized macular exanthem, often with involvement of the palms and soles, and perhaps accompanied by concomitants such as the constitutional symptoms previously mentioned, mucous patches on the orificial membranes, sore throat, moist papules in the flexures, and split papules at the buccal commissures.

Maculopapular eruptions, large and small papular eruptions, mottled alopecia, and syphilitic leukoderma usually represent a later period than is indicated by the very early macular exanthem. In the absence of precocious syphilis, squamous eruptions and discoid eruptions indicate a still later stage. Recurrent eruptions (recedives) occur occasionally in the second and third years and even later. They may be macular or they may consist of a mixture of macules, papules, squamous lesions, etc. The early cutaneous syphilides are not destructive and they tend toward universal distribution. They are not grouped or

configurate. Later, there is a tendency toward general rather than universal distribution, and still later there is grouping, configuration, and localization. These various eruption characteristics make it possible to obtain some idea of the duration of the disease.

When discussing the treatment of early syphilis one should keep in mind certain important fundamentals. The diagnosis should be made as early as possible, and it must be beyond dispute. Treatment should be begun at once, and while it should be modern and adequate, it should not kill or permanently injure the patient. The modern treatment of syphilis is dangerous when unintelligently or injudiciously administered. Adequate treatment includes selection of drugs and dosage, time intervals between treatments and courses, the number of courses, the period of time over which treatment extends, a careful follow-through, physical and laboratory check-up, and so on. Hardly any two syphilologists agree on therapeutic details but there is general accord relative to therapeutic principles. Time permits only a general therapeutic outline with enumeration of the principal indications and contra-indications. It is impossible here to discuss technic, various drugs, criteria of cure, syphilis and marriage, or even to elucidate dogmatic statements.

In the early primary stage with positive dark-field and negative blood, the author recommends 3 intravenous injections of nearsphenamine the first week. The first dose is 0.3 gm. The next 2 injections consist of 0.45 gm. This is followed by 7 nearsphenamine injections, 0.45 gm. each, and 7 intramuscular injections of bismuth, at weekly intervals. After a rest interval of three weeks a second course of weekly injections of both drugs, at the same dosage, is given. The two drugs are not given on the same day. A total of four courses are given over a period of a year with rest intervals of approximately one month. The patient should then be kept under observation for a year or two.

In the case of a dark-field positive chancre plus a positive blood serology but no other manifestations, the treatment for the first year is the same as that outlined, except that the first injection of nearsphenamine is 0.2 gm., and also, the treatment is continued during the second year. During the second year three courses of combined treatment are given. If then the

patient is negative physically and has a negative cerebrospinal and provocative blood serology, treatment is discontinued, but a check-up is requested each year for several years.

When the patient is in the frank secondary period at the time treatment is begun, *i.e.*, the chancre has healed, the blood serology is positive, and there are, perhaps, cutaneous or other clinical manifestations, the treatment is less intensive at the beginning and is continued over a much longer period. In order to avoid the possibility of a dangerous Herxheimer reaction, the author prefers to begin with three or four doses of insoluble bismuth administered intramuscularly at intervals of one week (bismudol, for instance: first injection 1 gr., thereafter 3 gr.). These injections are continued for fourteen weeks. Neoarsphenamine is begun in the third or fourth week, the first injection being 0.2 gm. Thereafter 0.45 gm. are given each week for a total of 10 injections. The course, therefore, consists of 10 neoarsphenamine and 14 bismuth injections. Six such courses are given during the first two years with rest intervals ranging from one to two months. After the second year the management of the case varies according to conditions. Courses as above outlined may be necessary during the next few years. Even when the patient seems to be cured at the end of the second year, it is advisable to give one course of arsphenamine

and two courses of bismuth during the third year, and two courses of bismuth in both the fourth and fifth years. In a Wassermann-fast case, it may be advisable to try other drugs including iodine and perhaps less conventional methods such as protein therapy. In all cases the general health must receive attention. The cerebrospinal serology is determined toward the end of the first year. The usual criteria of cure are fulfilled before treatment is discontinued, thereafter the patient is examined yearly.

This therapeutic outline is routine and must be modified in accordance with various indications and contra-indications. When one arsenical is not well borne perhaps another will be tolerated. To some extent dosage is governed by age, sex, weight, and especially by toleration. When intravenous injections are impossible, bismarsen may be administered intramuscularly. When the arsenicals are not tolerated, good results may be obtained with insoluble and soluble salts of bismuth or mercury or both.

In conclusion, it may be said that the successful management of syphilis requires a comprehensive knowledge of the disease and an equal knowledge of all established methods of treatment. It is possible for most physicians, especially those in large medical centers such as New York City, to acquire an excellent practical knowledge of syphilis and its management.

200 WEST 59TH STREET.

## THE MIDDLE-AGED AND ELDERLY SYPHILITIC: SPECIAL PROBLEMS IN DIAGNOSIS AND TREATMENT

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Most of us engaged in hospital and clinic practice are surprised at the frequency with which the routine blood examinations disclose a strongly positive Wassermann reaction. Many of these cases having positive Wassermann reactions have been invalids or semi-invalids for years, oftentimes with such obscure symptoms that it has never occurred to the attending physician to make a Wassermann test (Fig. 1).

### VARIETY OF SYMPTOMS

Some patients may present evidences of

a severe secondary anemia; others complain only of exhaustion and loss of initiative. Some may suffer with late afternoon headaches, or may show symptoms of a cardiovascular disease, such as aortitis, aneurysm, myocarditis, heart block, arterial spasms, hypo- or hypertension. Others have symptoms referable to the nervous system, such as a nervous breakdown, neuralgia, or rheumatic pains. Sore muscles, fainting spells, transient weakness, or even paralysis are not uncommon. Sometimes the patients have ocular palsies

or other visual disturbances. Again we encounter gastro-intestinal symptoms suggestive of duodenal or gastric ulcer, and still again, such visceral diseases as hepatitis, diabetes, or nephritis of syphilitic origin. It is this extraordinary variety of symptoms one finds resulting from syphilitic infection which makes this disease so interesting to us all, and which should keep us constantly on the alert in its detection.

#### ROUTINE WASSERMANN'S

Referring again to the routine blood examination, it might be of interest to recall that statistics from various private and semiprivate institutions show that from 2 to 12 per cent of the cases admitted to these hospitals have strongly positive Wassermann reactions. Zimmerman found that from a group of 500 tuberculous patients, 2 per cent had undiagnosed syphilis. Schroder, in a similar group found 4 per cent, Coster 2 per cent, and Landsberg 3.2 per cent. In the Vienna General Hospital, 12.12 per cent of more than 7,000 patients were found to be syphilitic. In the Presbyterian Hospital in New York for the year 1931, there were 3.1 per cent; and in our City Hospital, of the 23,279 patients admitted in 1930, 1931, and 1932, 2,115, or about 10 in every hundred had syphilis. Recent routine Wassermann tests on students from three of the professional schools of the University of Minnesota—medicine, dentistry, and education—over a period of two years, revealed 10 students with strongly positive reactions. Considering the above statistics, the wisdom of the routine Wassermann test seems undeniable.

#### INTERPRETATION OF THE WASSERMANN TEST

The diagnostic value of the strongly positive Wassermann test is recognized, I dare say, by all of us. With the exclusion of yaws, we can say with a fair degree of assurance that a carefully controlled and repeated four-plus Wassermann reaction means that the patient has syphilis. Our difficulty in making a diagnosis begins when we obtain a moderately positive Wassermann from the serum of a patient who has no symptoms or physical signs of syphilis. It is often necessary to repeat the Wassermann many times, and to supplement this by other tests, such as the Kahn and the Kline, and perhaps

the Meinicke tests, over a period of several weeks. Again, we may give a provocative arsphenamine injection, this is particularly valuable in patients with gummatous lesions, the Wassermann often becoming strongly positive after the injection.

The following case illustrates the importance of carefully controlling the Wassermann tests, especially where a positive report is given with serum obtained in the course of a routine examination and where



Fig. 1—Multiple gumma of eleven years' duration following injury and operation. Wassermann test had never been made.

there is neither a history of infection, symptoms nor physical signs of syphilis.

A young woman aged 19, was referred to the author on November 19, 1933, for anti-syphilitic treatment.

She had been admitted to a hospital for a cold and sinus infection and a routine Kline test done there had been reported four plus. A second Kline test done four days later was also four plus but the Kolmer test was negative. Three specimens of blood serum sent to the Board of Health, were all reported strongly positive, four plus.

The patient's family history was negative, her father, mother, two older sisters and one brother, all had negative Wassermans. The young woman denied all symptoms of venereal infection, she looked to be unusually strong and healthy and her physical and neurological examinations showed nothing abnormal.

Our laboratory report was two plus cholesterin; negative alcoholic; two plus Kahn; four plus Kline. We repeated the tests fourteen days later and every one of them was negative.

We then gave a provocative arsphenamine injection following which we tested the patient's blood eight times over a period of a month and all the reports were negative—Wasserman, Kline, and Kahn. We sent one specimen to the Board of Health, one to Columbia University, and one to Dr. Kolmer in Philadelphia; the latter two were reported negative; the report from the Board of Health was plus minus.

#### TREATMENT

Treatment of late syphilis is a different problem from that of early syphilis. Instead of having the young, robust,



Fig 2—Gumma of lip of three months' duration and interstitial glossitis, leukoplakia, and atrophy of tongue. Lesion on lip had been diagnosed and treated at one of the local hospitals. His blood Wassermann test had never been taken.

healthy individuals usually seen with early syphilis, we have patients in middle or advanced age, often showing evidences of senility. Their syphilitic infection is often complicated by other and more serious conditions of health. These tertiary cases are poor risks; and inasmuch as they are not usually infectious, we do not have to consider the problem of sterilization by intensive treatment. Furthermore, late syphilis does not offer the inducement of a negative Wassermann reaction in a short period of time; if a negative blood test is ever obtained, it requires at least two to five years, and there is still much uncertainty as to the significance of a negative Wassermann reaction in this stage of the disease. Many years ago, long before

we had the benefit of the Wassermann test in establishing a diagnosis of syphilis, Dr. Pratt, a general practitioner in New Orleans, used to say that mercury and iodide in the form of mixed treatment was a most excellent tonic for people suffering with many obscure chronic ailments. We might venture to guess that those who showed the most beneficial results from such a tonic were syphilitics.

*Treatment of Elderly Syphilitics.*—In the case of the elderly syphilitic, then, or one in late middle age, our foremost consideration is to relieve the patient's symptoms with the least amount of medication and minimum discomfort to him. At the Vanderbilt Clinic, it is a rule not to give arsphenamine to an individual over fifty years of age unless specifically indicated, and then only in small doses and at weekly intervals, the patient remaining under careful observation. When the syphilitic symptoms have been relieved, we depend on alternate courses of mercury and bismuth, supplemented by potassium iodide or mixed treatment, the latter consisting of

Hydrarg. chlor. corros. gr. iii

Iodid. Potass.

Elix. Lacto Pep.

M-Sig. Teaspoonful in glass of water  
15-30 minutes after meals.

*Importance of Encouraging the Syphilitic.*—In many such cases, it is necessary constantly to encourage and to reassure the patient. A positive Wassermann reaction in itself or a positive Wassermann reaction in a symptom-free patient, does not show necessarily that he is in a dangerous condition, or that the syphilis will prove fatal for him. The author could point out a number of men 65 to 84 years old with four-plus Wassermann reactions and with a history of syphilis of 40 to 45 years' duration—men who have never had any treatment. They have in many instances enjoyed excellent health and have had active and successful careers.

*Treatment of Patients between 40 and 50 Years.*—When it comes to the tertiary syphilitics between 40 and 50 years of age, it is always difficult to know how actively one should treat, especially if the patient has a four-plus Wassermann reaction without symptoms. The author has come to believe that where the patient's expectancy of life is from 20 to 35 more years, his physician should make a special effort to

obtain a negative Wassermann by treating him continuously over a period of several years with alternate courses of arsphenamine, mercury, or bismuth and mixed treatment, as described above. Our Clinic plan usually provides for such a case 15 weekly injections of mercury or bismuth with iodides by mouth, this treatment to be followed by 10 weekly injections of old arsphenamine. Two or three such alternate courses of arsphenamine and mercury are given, after which the patient is placed on a 5 to 6 months' rest. During this time he is to take mixed treatment. Fol-

remedy for syphilis, yet not infrequently it produces alarming symptoms of poisoning in one form or another. Most of us have seen tragic results following the administration of arsphenamine or one of the heavy metals. Ill effects may, and all too often do, occur, even in young and otherwise healthy subjects and of course there is all the greater need for caution in cases of the type under consideration here where to the risk inherent in the medication there is added the handicap of age and its complications. These patients are particularly susceptible to jaundice



Fig 3—Marked destruction of nose and lip from gumma of nine months duration. Was treated by private physician for several months with salves. Wassermann test had not been made.

lowing the rest period, he is given a course of 15 bismuth injections, then 10 more weekly doses of arsphenamine, and again a 6 months' rest with mixed treatment. Frequent physical examinations, Wassermann tests, urinalyses, and blood counts are made during the period of observation, of course, the spinal fluid is tested

#### SYMPTOMS OF POISONING DURING TREATMENT

It is unfortunate that the greater number of our most valuable and effective drugs are poisonous and must be prescribed with caution. Arsphenamine is our most potent



Fig 4—Multiple gumma of scalp and perosteum of four years duration. Wassermann test had never been made.

dermatitis, and neuritis. For this reason it is important to make frequent tests of blood and urine, in addition to careful and repeated physical examinations, as long as the patient remains under treatment.

**Laboratory Tests to Detect Intolerance to the Drugs**—The first course of treatment should always be preceded and usually followed, by a blood chemistry examination. The icteric index and the Van den Bergh test are valuable guides to the tolerance of the liver for the drug, an icteric index of 15 or above should be interpreted as a warning to discontinue arsphenamine and give sodium or calcium 30—Medical Journal—Overmatter, 5935 thiosulphate until the reading reverts to 10 or below. It is also advisable to examine the blood and urine for arsenic before beginning a course of arsphenamine.

injections, and to repeat these examinations several times during the course. Any patient whose blood reveals the presence of more than 0.09 mg. of arsenic per 100 gm. of dried specimen before beginning arsphenamine medication should be watched with especial care, for the chances are that he is getting arsenic from some outside source, such as foods, "tonics," etc., and it is a question whether his powers of elimination will be able to keep pace with the increased burden. In patients who are tolerating their arsphenamine without any untoward symptoms, a finding of 0.08 or 0.09 mg. of arsenic in the blood is not a cause for alarm, but if the figure rises much beyond this, it usually indicates undue retention of arsenic in the system and calls for at least a temporary discontinuance of the drug. The same holds true of urine findings.

*Careful Technic.*—Besides the precautions of physical and laboratory examinations already outlined, the writer cannot too strongly emphasize the necessity for a

careful technic of injection. Most syphilologists will state that while they have had cases of arsphenamine dermatitis appear in their hospitals and clinics, they have never had a generalized exfoliative dermatitis in their private practice. An arsphenamine dermatitis nearly always means either a break, somewhere, in the technic, or else the administration of too large or too frequent doses of the drug, or both. Just how many cases owe their origin to a paravenous infiltration will probably never be known, but many have been definitely traced to such mishaps.

As we grow in experience, we become more and more cautious in our use of the antisypilitic drugs, even in the most vigorous subjects; and certainly no single class of patients presents such a challenge to the general knowledge and discrimination of the physician as do the latent and tertiary syphilitics. The author knows of no group deserving more careful preliminary study and many-sided follow-ups than these.

#### AMERICAN CONGRESS OF PHYSICAL THERAPY

The Eastern Section of the Congress has arranged for a joint meeting with the New York Physical Therapy Society and the Pennsylvania Physical Therapy Society to take place on April 7, 1934, at the Medical Center in New York City. The meeting will have a morning session, a luncheon and an afternoon session. Clinical demonstrations have been combined with papers by speakers of note.

Dr. William H. Schmidt of Jefferson Medical School will talk on *Fever Therapy*;

Dr. George Miller MacKee of Columbia University on *Physicall Therapy in Dermatology*;

Dr. Leroy W. Hubbard of Georgia Warm Springs Foundation on *Muscle Training and Re-education Exercises in the Treatment of Anterior Poliomyelitis*;

Dr. Max Thorek of the Cook County Graduate School of Medicine in Chicago on *An Electrosurgical Method for Obliteration of the Gall-bladder*;

Dr. Robert H. Kennedy of the Beeckman Street Hospital in New York City on *Physical Therapy in the Treatment of Fractures*;

Dr. Earl R. Carlson of the Neurological Institute in New York City on *The Neurological Aspect and Treatment of Birth Injuries*.

The Tugwell bill at Washington is said to be meeting stormy weather. The patent medicine and cosmetics industries are up in arms against its provisions, which threaten to ban their most effective, if least truthful, advertising claims.

Congressman Sirovich, of New York, has introduced a bill to regulate interstate traffic in food, drugs, nonalcoholic or nonintoxicating drinks, and cosmetics.

French doctors have confirmed the old belief that bee stings are good for rheumatism. They were themselves skeptical at first, we read in the *Journal of the A. M. A.*, but twenty experiments convinced them. They placed the bees in a cupping glass on a sheet of paper, then applied it to the affected spot and withdrew the paper. Thirty bees stinging the patient at one "sitting," every three days, is declared adequate. The treatment often takes two months. A solu-

tion of bee venom, it seems, can be used hypodermically with the same results. This remedy is very ancient, being mentioned by Hippocrates.

Much interest is being manifested in medical circles in the amendments now pending in Congress to relax the present federal birth-control laws. Popularly styled the "Doctors Only" bills, they would amend the existing federal restrictions so as to legalize the sending or receiving of contraceptive information, instruments and medicines between physicians and their patients, medical colleges and hospitals and from physician supply houses and manufacturers. Under the present statutes, penalties of heavy fines and imprisonment may be inflicted for transporting any article intended for the prevention of conception or for receiving for distribution to others any such article that has been transported interstate or by the government mails.

# ANNUAL MEETING

*of the*

Medical Society of the State of New York

AT UTICA  
MAY 14, 15, and 16



The Hotel Utica will be General Headquarters The Hotel Martin will house the Scientific and Commercial Exhibits, also the General Sessions The Section meetings will be held in various outside places

Please read your program carefully, find the exact location of each Section and make out your schedule so that you will not lose time in going from one place to another Check off the papers you wish to hear and, if possible, come prepared to join in the discussion

There will be several Scientific Exhibits of interest to the general and special practitioners The Commercial Exhibit will, as usual, be worth your time Investigate the newer medical and surgical appliances Competent demonstrators will be in attendance at both exhibits

Make your hotel reservations early, verify your room and secure the accommodation that you desire The Local Arrangements are in charge of Dr Andrew P Sloan, who extends a whole hearted welcome to all members of the Society After your arrival in Utica he and his efficient committee will attend to your physical comforts

A special entertainment is planned for Tuesday evening, the details will appear in the final program which you will receive several days before you leave for Utica

Be sure to make your hotel reservations in advance and plan to stay in Utica for the entire session

## FOR THE LADIES

A special invitation is extended to the ladies of the profession, the wives and daughters of physicians It has been a long trying winter Your husband needs the relaxation and the mental stimulation of contact with his fellow practitioners You deserve a change The ideal way to receive mutual benefit is for you to come with him to Utica

Begin to make your arrangements to have an enjoyable vacation at the time of the Annual Meeting of the State Society Note particularly the days, May 14th, 15th and 16th Leave home on Sunday so as to arrive in Utica, Sunday evening, or at the latest Monday morning Enjoy the trip to and from Utica and after your days in that city you will return to your work refreshed and rejuvenated

# Scientific Program

*All Meetings Will Be Held By Daylight Saving Time*

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## GENERAL SESSIONS

Place of Meeting—Hotel Martin, Ballroom, Second Floor

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Tuesday, May 15th, at 2:00 P. M.

SYMPOSIUM: The Hormones Which Influence Growth and Reproduction.

1. "The Pituitary Sex Hormones", Philip E. Smith, Ph.D., New York (Invited Guest)
  2. "Nature and Action of Ovarian Therapy, Including the Corpus Luteum, from the Laboratory Standpoint", George W. Corner, M.D., Rochester (Invited Guest)
  3. "The Present Status of the Female Sex Hormone from the Clinical Standpoint", Robert T. Frank, M.D., New York
  4. "On the Relation of the Increta of the Adenohypophysis to the Disturbances of Growth and Development met with Clinically" Lewellys F. Barker, M.D., Baltimore, Md. (Invited Guest)
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Wednesday, May 16th, at 2:00 P. M.

SYMPOSIUM: Forensic Medicine.

1. "Qualified Medico-Legal Experts; their value to the Community and to the Medical and Legal Profession", Charles Norris, M.D., New York
  2. "Causes of Sudden Death", Harrison S. Martland, M.D., Newark, N. J. (Invited Guest)
  3. "The Personality Makeup of the Criminal", Vernon C. Branham, M.D., Albany
  4. "The Role of Toxicology in a Medico-Legal Autopsy", Alexander O. Gettler, Ph.D., New York (Invited Guest)
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## THE SECTIONS

All papers read before the Society by members become the property of the Society. The original copy of each paper shall be left with the Secretary of the Section. Discussors should have their remarks typed and hand them to the Secretary if they wish them published. Section meetings shall begin promptly at the hour specified.

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### SECTION ON MEDICINE

CHAIRMAN.....ALFRED M. WEDD, M.D., CLIFTON SPRINGS  
SECRETARY.....FRANK BETHEL CROSS, M.D., BROOKLYN

Place of Meeting—Westminster Church House, First Floor

Tuesday, May 15th, at 10:00 A. M.

1. "The Irritable Colon", H. Walden Retan, M.D., Syracuse  
*Discussion opened by A. H. Aaron, M.D., Buffalo.*



2. "The Early Recognition of Peripheral Venous Thrombosis", Meyer A. Rabinowitz, M.D., Brooklyn

*Discussion opened by Adrian S. Taylor, M.D., Clifton Springs*

3. "Interrelations of Neuropsychiatry and General Medicine", Foster Kennedy, M.D., New York

*Discussion opened by Nelson G. Russell, M.D., Buffalo*

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Wednesday, May 16th, at 9:00 A. M.

1. "Practical Diagnosis and Treatment of Anemia", Stuart L. Vaughan, M.D., Buffalo

*Discussion opened by John S. Lawrence, M.D., Rochester*

2. "Tissue Reactivity to Streptococci and its Bearing on the Problem of Arthritis", Charles H. Hitchcock, M.D., Syracuse

*Discussion opened by William B. Rawls, M.D., New York*

3. "The Clinical Importance of Plasma Proteins", William S. McCann, M.D., Rochester

*Discussion opened by David A. Haller, M.D., Rochester*

4. "Observations on Conditions that May Simulate 'Angina Pectoris'", Emanuel Libman, M.D., New York

*Discussion opened by Alexander Lambert, M.D., New York*

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## SECTION ON SURGERY

CHAIRMAN.....FLOYD S. WINSLOW, M.D., ROCHESTER  
SECRETARY.....EDGAR A. VANDER VEER, M.D., ALBANY

Place of Meeting—Hotel Martin, Ballroom.

Tuesday, May 15th, at 10:00 A. M.

1. "Bone Tumors and Allied Conditions", James Morley Hitzrot, M.D., New York

*Discussion opened by Philip L. Forster, Albany*

2. "Treatment of Angina Pectoris and Congestive Heart Failure by Complete Ablation of the Thyroid Gland"

Medical Aspects, Herrmann L. Blumgart, M.D., Boston, (Mass. (Invited Guest)

Surgical Aspects, David D. Berlin, M.D., Boston, Mass. (Invited Guest)

*Discussion opened by W. Borkley Parsons, M.D., New York*

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Wednesday, May 16th, at 9:00 A. M.

## SYMPOSIUM: Peptic Ulcer

1. "History of the Surgery of Peptic Ulcer", William D. Johnson, M.D., Batavia
2. "A Study of 671 Peptic Ulcers with Special Emphasis on 114 Postoperative Cases", Reynold E. Church, M.D., New York, and J. William Hinton, M.D., New York

3. "Some Pitfalls in the Treatment of Gastric Ulcer", W. J. Merle Scott, M.D., Rochester
4. "Choice of Operation in Peptic Ulcer", George J. Heuer, M.D., New York  
*Discussion opened by Hyzer W. Jones, M.D., Utica*

## SECTION ON OBSTETRICS AND GYNECOLOGY

CHAIRMAN.....MILTON G. POTTER, M.D., BUFFALO

SECRETARY.....HOWARD C. TAYLOR, JR., M.D., NEW YORK

Place of Meeting—Westminster Church House, First Floor

Tuesday, May 15th, at 10:00 A. M.

1. "Basal Metabolism during Pregnancy", Edward C. Hughes, M.D., Syracuse  
*Discussion opened by J. Thornton Wallace, M.D., Jackson Heights*
2. "Minor Complaints of Pregnancy", Charles J. Marshall, M.D., Binghamton  
*Discussion opened by George H. Bonnefond, M.D., Utica*
3. "Technique of Obstetrical Forceps", Motion Picture Demonstration, William T. Getman, M.D., Buffalo  
*Discussion opened by James K. Quigley, M.D., Rochester*

Wednesday, May 16th, at 9:00 A. M.

1. "Experimental Evaluation of the Use of Some Vaginal Antiseptics during Labor", R. Gordon Douglas, M.D., New York, and Henrietta S. Rhees, M.S., New York (Invited Guest)  
*Discussion opened by Henricus J. Stander, M.D., New York*
2. "Early Diagnosis of Cervical Carcinoma", Nathan P. Sears, M.D., Syracuse  
*Discussion opened by Howard C. Taylor, Jr., M.D., New York*
3. "Conservation of the Fundus Uteri", Herbert F. Traut, M.D., New York  
*Discussion opened by Henricus J. Stander, M.D., New York*
4. "Study and Treatment of Amenorrhea", C. Arthur Elden, M.D., Rochester  
*Discussion opened by Karl M. Wilson, M.D., Rochester*

## SECTION ON NEUROLOGY AND PSYCHIATRY

CHAIRMAN.....LEON H. CORNWALL, M.D., NEW YORK

SECRETARY.....JOHN L. ECKEL, M.D., BUFFALO

Place of Meeting—Westminster Church House, Second Floor

Tuesday, May 15th, at 10:00 A. M.

1. "Neuropsychiatric Considerations of the Sequelae of Head Injuries", Nathan Savitsky, M.D., New York  
*Discussion opened by Eugene N. Boudreau, M.D., Syracuse*

- 2 "The Modern Psychiatric Hospital in Relation to Public Health", William W Wright, M D, Marey  
*Discussion opened by Richard H Hutchings, M D, Utica*
  - 3 "Neurological Aspects and Treatment of Birth Injuries, with Motion Picture Demonstration", Earl R Carlson, M D, New York, and Walter O Klingman, M D, New York  
*Discussion opened by Rosalind G Freeman Jr, M D, New York*
  - 4 "Practical Diagnostic and Therapeutic Considerations in Anterior Poliomyelitis", Irving J Sands, M D, Brooklyn  
*Discussion opened by Paul H Garvey, M D, Rochester, and A Clement Silverman, M D, Syracuse*
  - 5 "Recent Advances in the Treatment of Epidemic Encephalitis", Josephine B Neal, M D, New York  
*Discussion opened by Edward B Angell, M D, Rochester*
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Wednesday, May 16th, at 9 00 A M

- 1 "The Circle of Willis, Its Anomalies and Aneurysms", with Lantern Slide Demonstration, Wardner D Ayer, M D, Syracuse  
*Discussion opened by Edzem G Zabriskie, M D, New York*
  - 2 "Psychological Factors in Respiratory Syndrome" Clarence P Oberndorf, M D, New York  
*Discussion opened by Harry A Steckel, M D, Syracuse*
  - 3 "Intermittent Obstruction of the Foramen of Monro by Tumors of the Third Ventricle", with Lantern Slide Demonstration, Byron Stookey, M D, New York  
*Discussion opened by William P Van Wagenen, M D, Rochester*
  - 4 "A Neuroendocrine Concept of the Cerebral Gland", with Lantern Slide Demonstration, Irving H Pardee, M D, New York  
*Discussion opened by James W Putnam, M D, Buffalo*
  - 5 "Vegetative Disorders of Cerebral Origin", with Lantern Slide Demonstration, Joseph H Globus, M D, New York  
*Discussion opened by Nelson K Fromm M D, Albany*
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## SECTION ON PEDIATRICS

CHAIRMAN	ADOLPH G DE SANCTIS M D NEW YORK
VICE CHAIRMAN	GEORGE C SINCERBEAUX M D AUBURN
SECRETARY	GEORGE M RETAN, M D SYRACUSE

Place of Meeting—Westminster Church House, Third Floor

Tuesday, May 15th, at 10 00 A M

- 1 "A Study in Infant Stools", with Lantern Slide Demonstration, Frank van der Bogert, M D, Schenectady  
*Discussion opened by Arthur W Benson, M D, Troy*
- 2 "The Value of Continuous Intravenous Method of Fluid Administration (Venoclysis) in Pediatrics", Samuel Karelitz, M D, New York  
*Discussion opened by John Dorsey Craig, M D, New York*
- 3 "Epilepsy of Allergic Origin", T Wood Clarke, M D, Utica  
*Discussion opened by Brewster C Doust, M D, Syracuse*

4. "Cutaneous Reactions to Hemolytic Streptococcus Nucleoprotein in Rheumatic and Nonrheumatic Children", Albert D. Kaiser, M.D., Rochester  
*Discussion opened by Samuel W. Clausen, M.D., Rochester*

Wednesday, May 16th, at 9:00 A. M.

1. "Clinical Aspects of Forced Perivascular Drainage of the Central Nervous System", with Motion Picture Demonstration, George M. Retan, M.D., Syracuse  
*Discussion opened by Orren D. Chapman, M.D., Syracuse (Invited Guest)*
2. "Treatment of Erythroblastosis of the New Born", Douglas P. Arnold, M.D., Buffalo  
*Discussion opened by A. Wilmot Jacobsen, M.D., Buffalo*
3. "A Clinical Survey of the More Common Diseases of the New Born", Roger H. Dennett, M.D., New York, and Leslie O. Ashton, M.D., New York
4. "The Problem of the Premature Infant", Ralph M. Tyson, M.D., Philadelphia, Pa. (Invited Guest)  
*Discussion of these two papers opened by Edward J. Wynkoop, M.D., Syracuse*

## SECTION ON DERMATOLOGY AND SYPHILOGY

CHAIRMAN.....GEORGE M. FISHER, M.D., UTICA  
 SECRETARY.....FRANK C. COMBES, M.D., NEW YORK

Place of Meeting—Westminster Church House, First Floor

Tuesday, May 15th, at 10:00 A. M.

1. "Observations on Arsphenamine Dermatitis with Special Reference to the Reliability of the Patch Test", James W. Jordan, M.D., Buffalo  
*Discussion opened by Lopo de Mello, M.D., Syracuse*
2. "The Clinical Interpretation of the Kline and Wassermann Tests", Leo Spiegel, M.D., New York, and Charles R. Rein, M.D., New York  
*Discussion opened by A. Benson Cannon, M.D., New York*
3. "Sulpharsphenamine, Its Use and Status in New York State", Albert Pfeiffer, M.D., Albany  
*Discussion opened by Earl D. Osborne, M.D., Buffalo, and Harry D. Parkhurst, M.D., Utica*
4. "Poisoning from 'Blue Ointment'", Eugene F. Traub, M.D., New York  
*Discussion opened by Mark Heiman, M.D., Syracuse*
5. "Studies on the Clinical Manifestations of Herpes", Albert R. McFarland, M.D., Rochester  
*Discussion opened by Jerome Kingsbury, M.D., New York*
6. "The Leukocytes in Skin Diseases", Ray H. Rulinson, M.D., New York  
*Discussion opened by Howard Fox, M.D., New York*
7. "Jonathan Hutchinson", Joseph V. Klauder, M.D., Philadelphia, Pa. (Invited Guest)

Wednesday, May 16th, at 9:00 A. M.

1. "Focal Infections as Related to Pustular Eruptions of the Hands and Feet", George C. Andrews, M.D., New York

- 2 "Pustular Psoriasis", David Bloom, M.D., New York

*Discussion on these two papers opened by George M MacKee, M D, New York*

3. "Studies in Eczema of Infancy and Childhood", Samuel M Peck, M.D., New York

*Discussion opened by Abraham Wolzer, M.D., Brooklyn*

4. "Acne Vulgaris and Its Relationship to Other Acneform Eruptions", Marion B. Sulzberger, M.D., New York

*Discussion opened by Herman Shorlit, M D, New York*

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## SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

CHAIRMAN..... FRANK M SULZMAN, M D, TROY

SECRETARY .. . . . . WEBB W. WELLS, M D, NEW YORK

Place of Meeting—Westminster Church House, Second Floor

Tuesday, May 15th, at 9:00 A. M.

Instructional Hour 9 00 A M to 10 00 A M

- a "Anesthesia, Local and General, Eye", Walter S Atkinson, M D, Watertown

- b "Anesthesia, Local and General, Nose and Throat", Clayton M. Brown, M D, Buffalo

- 1 "The Prevention of Hard of Hearing", Frederick J. O'Connor, M D, Syracuse

*Discussion opened by John D. Corroll, M D, Troy, and Frederick A Lewis, M D, Auburn*

2. "Treatment of Sinus Thrombosis", Truman L. Saunders, M D, New York

*Discussion opened by John F. Fairboirn, M D, Buffalo, and Samuel J Kopetzky, M D, New York*

3. "Observations on Some Disturbances of the Vestibular Function", Page Northington, M.D., New York

*Discussion opened by Richard M. Brickner, M.D., New York*

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Wednesday, May 16th, at 8:30 A. M.

Instructional Hour 8 30 A. M. to 10 00 A. M

"Case Demonstration as to the Diagnosis and Treatment of Muscle Anomalies", James W. White, M D, New York, and John H Dunnington, M D, New York

1. "Cataract Extraction", Ben Witt Key, M D, New York

*Discussion opened by Albert C. Snell, M D, Rochester, Ernest F. Krug, M D, New York, and Jason L. Wiley, M.D., Auburn*

2. "When Should a Senile Cataract Be Removed?", a Slitlamp Study and Photographic Demonstration, Arthur J. Bedell, M.D., Albany

3. "Pathology of Immature and Mature Senile Cataract and of Adjacent Zonular Fibers", Daniel B. Kirby, M.D., New York

*Discussion opened by John F Gagner, M D., Rochester, and David F. Gillette, M.D., Syracuse*

## SECTION ON PUBLIC HEALTH, HYGIENE AND SANITATION

CHAIRMAN.....STANLEY W. SAYER, M.D., GOUVERNEUR

SECRETARY.....WALTER A. LEONARD, M.D., CAMBRIDGE

Place of Meeting—Hotel Utica

Tuesday, May 15th, at 10:00 A. M.

Hotel Utica, English Room

1. "Clinical Experience with Vitamin D. Milk", Jacques M. Lewis, M.D., New York

*Discussion opened by Paul B. Brooks, M.D., Albany*

2. "Prevention and Treatment of Serum Sickness", James R. Wilson, M.D., Syracuse

*Discussion opened by O. W. H. Mitchell, M.D., Syracuse*

3. "Laboratory Developments in Diphtheria Immunization with Special Reference to One Dose Toxoid", William H. Park, M.D., New York

*Discussion opened by Chalmer J. Longstreet, M.D., Binghamton, and Myron M. Metz, M.D., Williamsville*

Wednesday, May 16th, at 9:00 A. M.

Hotel Utica, Ballroom

## SYMPOSIUM: Asphyxia

1. "The Prevention of Asphyxiation During Anesthesia", Paluel J. Flagg, M.D., New York

2. "The Treatment of Asphyxia in Clinical Disease with Especial Reference to Recent Developments of the Use of Oxygen in Heart Failure", Alvan L. Barach, M.D., New York

3. "The Death Zone in Asphyxia", with Lantern Slide and Motion Picture Demonstration, Chevalier Jackson, M.D., Philadelphia, Pa. (Invited Guest), and Chevalier L. Jackson, M.D., Philadelphia, Pa. (Invited Guest)

## SECTION ON UROLOGY

CHAIRMAN.....TERRY M. TOWNSEND, M.D., NEW YORK

SECRETARY.....THOMAS F. LAURIE, M.D., SYRACUSE

Place of Meeting—Westminster Church House, Third Floor

Tuesday, May 15th, at 10:00 A. M.

## SYMPOSIUM: The Treatment of Gonorrhea

1. "Acute", Albert M. Crance, M.D., Geneva

2. "Chronic", Ernest M. Watson, M.D., Buffalo

3. "Gonorrhea in the Female", Robert N. Ritchie, M.D., Rochester

*Discussion opened by Abraham L. Wolbarst, M.D., New York, and John E. Heslin, M.D., Albany*

Wednesday, May 16th, at 9:00 A. M.

## SYMPOSIUM: Obstructive Uropathy:

1. "Renal", Francis N. Kimball, M.D., New York

2. "Vesical", James N. Vander Veer, M.D., Albany

3. "Urethral", Arthur H. Paine, M.D., Rochester

*Discussion opened by Oswald S. Lowsley, M.D., New York, and J. Sturdivant Read, M.D., Brooklyn*

## SECTION ON RADIOLOGY

CHAIRMAN                      JOSEPH M STEINER M D New York  
VICE CHAIRMAN              DONALD S CHILDS M D SYRACUSE  
SECRETARY                    LEO P LARKIN, M D ITHACA

Place of Meeting—Westminster Church House Third Floor

Tuesday, May 15th, at 10 00 A. M

- 1 "Cancer of the Tonsil", James J Duffy M D New York
  - 2 "Palliative Irradiation of Inoperable Gastric Cancer", George T Pack, M D,  
New York
  - 3 "Cancer Research", Francis Carter Wood, M D, New York
  - 4 "Postoperative Roentgen Therapy for Carcinoma of the Breast", Maurice  
Lenz, M D, New York, Haig H Kasabach, M D, New York
- General Discussion opened by Douglas Quick, M D New York, and Virginia  
K Frantz, New York*

Wednesday, May 16th, at 9 00 A. M

- 1 "Encephalography", Cornelius G Dyke, M D New York  
*Discussion opened by Charles W Schwartz M D New York*
- 2 "Bronchography", Leopold Jachies, M D, New York and Isidor F Shapiro  
M D, New York  
*Discussion opened by James M Flynn, M D, Rochester*
- 3 "Small Intestine, the Major and Minor Motor Phenomena and Their  
Differentiation from Pathological Lesions", Lewis Gregory Colt, M D, New York  
*Discussion opened by Donald S Childs, M D, Syracuse*
- 4 "Low and High Power Roentgenographic Studies of the Sigmoid", William  
H Stewart, M D, New York, and Henry E Illick, M D New York  
*Discussion opened by Ulysses S Kann, M.D, Binghamton*
- 5 "Excretion Urography and Its Value to the Radiologist" Leo P Larkin  
M D, Ithaca  
*Discussion opened by Lester Leryn, M D, Buffalo*

## SESSION ON PHYSICAL THERAPY

CHAIRMAN                      RICHARD KOVACS, M D, NEW YORK

Place of Meeting—Hotel Utica, English Room

Wednesday, May 16th, at 9 00 A. M.

- 1 "The Physical Therapy Department in a Hospital", Frederick E Bauer,  
M D, New York  
*Discussion opened by Lee A Hadley, M D, Syracuse, and Kristian G Hansson,  
M D, New York*
- 2 "Physical Therapy in General Practice", Harold J Harris, M D, Westport  
*Discussion opened by Madge C L McGinness, M D, New York, and Guy  
H Turell, M D, Smithtown Branch*
- 3 "Physical Therapy in Industrial Injuries", John B Stevens, M D, Syracuse  
*Discussion opened by Homer J Knickerbocker, M D, Geneva, and James W  
Wiltzie, M D, Binghamton*
- 4 "The Work of the Council on Physical Therapy of the American Medical  
Association", John S Coulter, M D, Chicago, Ill (Invited Guest)  
*Discussion opened by Thomas P Farmer, M D, Syracuse, and Richard Kovacs,  
M D, New York*
- 5 "Physical Therapy in a Health Resort", Walter S McClellan, M D,  
Saratoga Springs  
*Discussion opened by George S Towne, M D, Saratoga Springs, and John DeP  
Currence, M D, New York*

# Scientific Exhibit

Hotel Martin, Rotunda, Mezzanine, and Connecting Corridor

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## NEW YORK STATE DEPARTMENT OF HEALTH LABORATORY DIVISION

### *Title:* Laboratory Aids in Diagnosis

*Description:* Data will be exhibited relative to Amoebiasis, Bacillary Dysentery, Infectious Moniliasis, Granular and Floccular Agglutination of *Bacillus Typhosus*, foci of infection in Undulant Fever.

RUTH GILBERT, M.D.

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DRS. W. H. CARY and R. S. HOTCHKISS  
New York

### *Title:* Evaluation of Male Fertility

*Description:* Microcinema of different behavior types of human spermatozoa. The fertilization of the sea urchin egg is depicted demonstrating the final interaction between egg and sperm.

ROBERT S. HOTCHKISS, M.D.

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## PHYSICAL THERAPY COUNCIL OF THE AMERICAN MEDICAL ASSOCIATION

### *Title:* The Therapeutic Effects of Heat, Hydrotherapy and Exercise

*Description:* Exhibit consists of motion pictures and charts designed to substantiate the physiological effects of physical therapy procedures.

THOMAS G. HULL, M.D.

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DR. ABE L. WOLBARST  
New York

### *Title:* Pathology of the Verumontanum and Posterior Urethra in Chronic Gonorrhea

*Description:* Exhibit consists of 16 wax models illustrating pathologic conditions in the posterior urethra as seen by aid of cystourethroscope. Also chart illustrating technique of Five Glass Catheter Test in Chronic Gonorrhea.

ABE L. WOLBARST, M.D.

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## COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY DEPARTMENT OF OPHTHALMOLOGY

### *Title:* Color Photographs of Anterior Segment

*Description:* Stereoscopic transparencies of diseases of the external eye showing pathology of lids, conjunctivae, cornea, anterior chamber, iris and lens.

DAVID F. GILLETTE, M.D.



COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY  
DRS. JANE SANDS ROBB and J. G. FRED HISS

*Title:* Ventricular Muscles and their Coronary Blood Supply

*Description:* Dissections and injections of hearts, demonstrating the component muscles and their blood supply. Also charts showing characteristic electrocardiograms when individual muscles are eliminated.

JANE SANDS ROBB, M.D.

COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY  
DEPARTMENTS OF CLINICAL PATHOLOGY AND PHOTOGRAPHY

*Title:* Blood Diseases

*Description:* Natural Color Photomicrographs x 1200, taken from stained blood smears showing common and rare blood conditions. Transparencies. Viewing Frames. Lantern Projections.

WILLIAM A. GROAT, M.D.

STELLA ZIMMER, R.N.

DR. THOMPSON STEVENS  
New York

*Title:* Irradiation in Thyrotoxicosis

*Description:* Statistical charts of the results of treatment. Photographs of technique employed in treatment by roentgen ray and radium. Photographs and histories of patients.

THOMPSON STEVENS, M.D.

MEDICAL SCHOOL, UNIVERSITY OF BUFFALO

*Title:* The Renal Tubule—Normal and Injured

*Description:* Structural and functional differentiation of the renal unit in the kidney of vertebrates with actual and photographic demonstration.

J. GRAHAM EDWARDS, M.D.

STATE INSTITUTE FOR STUDY OF MALIGNANT DISEASES  
DR. BURTON T. SIMPSON

*Title:* Malignant Neoplasms

*Description:* A study of malignant neoplasms from different organs of the body portrayed by means of transparencies with history, description of the lesion, pathological diagnosis, treatment and results.

LOUIS C. KRESS, M.D.

DR. KEITH KAHN  
New York

*Title:* Plastic Surgery (nose)

*Description:* Photographs, before and after operation. A series of plaster casts will be exhibited.

KEITH KAHN, M.D.

NEW YORK LEAGUE FOR THE HARD OF HEARING, INC.  
New York

*Title:* Better Hearing for the State's Children

*Description:* Exhibit consists of charts, photographs and audiometers.

ESTELLE SAMUELSON.

DR. ARTHUR J. BEDELL

Albany

*Title:* Colored Photographs of the Eye

*Description:* A large collection of colored stereoscopic photographs of diseases of the external eye also stereoscopic pictures illustrating the various types of cataract presented in conjunction with a paper before the Section on Ophthalmology on, "When Should a Senile Cataract be Removed?"

DR. WILLIAM S. COLLENS

Brooklyn

*Title:* "Simple Methods for Writing Scientific Diets," and "One Hundred Obesity Diets on One Chart"

*Description:* Exhibit consists of illustrative charts.

WILLIAM S. COLLENS, M.D.

DR. WILLIAM F. JACOBS

Buffalo

*Title:* Educational Anatomical Material from Laboratory of Pathology, University of Buffalo, and Buffalo City Hospital

*Description:* Educational cinema on Trichinosis. Corrosive specimens of the renal arterial tree mounted with companion kidney in arterionephrosclerosis. Large histological sections of lungs in pulmonary lesions.

WILLIAM F. JACOBS, M.D.

DR. ERNEST B. HANAN

Buffalo

*Title:* Hematological Studies Graphically Represented

*Description:* Hematological graphs from a series of case studies.

ERNEST B. HANAN, M.D.

ALEXANDER O. GETTLER, Ph.D.

New York

*Title:* Medical Legal Toxicology

*Description:* Illustrative examples of Toxicology with demonstrations. Case records and material illustrative of causes of sudden death.

ALEXANDER O. GETTLER, Ph.D.

SOCIETY FOR THE PREVENTION OF ASPHYXIAL DEATH, INC.  
New York

*Title:* Asphyxial Death

*Description:* Gross and microscopic specimens illustrating the principal causes of acute asphyxiation.

PALUEL J. FLAGG, M.D.

# Commercial Exhibit

Hotel Martin, Mezzanine Floor

**Beech-Nut Packing Co** Beech-Nut Strained Foods are made from selected raw materials high in mineral and vitamin value. These have been protected and conserved to a high degree in the preparation of Beech-Nut strained cereals, fruits, and vegetables by cooking them in a high vacuum, using the least possible water and preserving all juices so that nothing is lost. This scientific process insures greater uniformity and digestibility, both important to the baby and to invalids or convalescents as well.

No preservatives, whether permitted by law or not (and this includes sulphur dioxide), nor any coloring matter of any kind, whether legally approved or not, are used in these foods in any form. Call at booth 18 for samples.

**Bilhuber-Knoll Corp.** For the successful treatment of heart disease, Theocalcin (theobromine calcium salicylate), a well tolerated myocardial stimulant and diuretic, is widely used. Theocalcin and the other fine medicinal chemicals of this well-known firm will be found at Booth No. 20.

Dermatologists will be interested in Euresol for scborreic conditions of the skin and scalp and Lemigallul, for chronic eczemas.

The cardio respiratory restorative Metrazol, will also be featured. Metrazol is of interest for emergencies as shock, infantile asphyxia and in pneumonia.

**Davies, Rose & Co, Ltd (Booth 21)** Those who do not know of this firm's Standardized Pills of Stramonium Leaves, employed in the treatment of postencephalic symptoms, will doubtless wish to make a point of investigating this product. Mr R J Mansfield and Mr H V Orme will be in attendance to give full information on it. They will also be glad to discuss Pil Digitalis (Davies, Rose) with physicians who may not already be familiar with this dependable form of administering digitalis.

**Sandoz Chemical Works, Inc.**, will feature 'Calglucon,' pioneer calcium product whose introduction has considerably widened the field of applicability of calcium therapy. It is well tolerated orally, safe and non-irritant for intravenous and intramuscular injection. A special process insures perfect stability of the ampule solution and guarantees the utmost in tolerance and therapeutic effectiveness—'Gynegen' is the original and only product containing the specific ergot alkaloid 'ergotamine' in pure and stable form. It is the only ergot product in New and Nonofficial Remedies recommended for both oral and subcutaneous use.—In the field of heart therapy, 'Scillaren' and 'Scillaren'-B, new glucosidal principles of squill will be featured—Competent representatives will be in attendance at Booth No. 3 to answer questions pertaining to these products as well as other Sandoz preparations.

**Merck & Co, Inc.** In Booth No. 6 will be displayed such well known preparations as NEOARSPHENAMINE for the treatment of syphilis, TRYPARSAMIDE for the treatment of Paresis, STOVARSOL for a malaric dysentery, DIGITAN for heart diseases, ERYTHROL TETRANITRATE for hypertension, BISMOSOL, a water soluble preparation for intramuscular use in syphilis. A few of Merck's prescription chemicals will also be shown. The Merck booth is always an attractive center of interest and will be in charge of Mr Kraus and Mr Reilly, who will give you full data on the above preparations.

**Sanborn Co.** The 1934 Sanborn Motor-Graf Metabolism Tester introducing the electrically driven Kymograf clock is on display in Booth 19. Other features are the quiet running motor-blower for circulation of air and oxygen, oxygen shut-off valve, mobile table finish in harmonizing colors with table to match main apparatus. The 1934 Sanborn Electric-Portocardiograf operates directly from lamp socket or wall plug, is complete in two compact attractive solid mahogany inlaid carrying cases with table to

match. This makes a sturdy and substantial office outfit as well as a conveniently portable outfit for testing at patient's homes.

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**E. R. Squibb & Sons.** Members of the Medical Society of the State of New York are cordially invited to visit the Squibb booth, at which there will be displayed some of the new developments from the Squibb Laboratories.—Among the newer products featured will be Halibut-Liver Oil Concentrate Tablets, a new anti-anemic liver preparation, a new glandular product, a new product for Diphtheria immunization and a new calcium preparation with Vitamin D.

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**The Mutual Pharmacal Company, Inc., Syracuse, N. Y.,** will exhibit products of its laboratory during the April Meeting of the State Society in Utica, N. Y.

A cordial invitation is extended to physicians to visit booth 14, Technical Exhibit, Mezzanine floor, Hotel Martin.

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**R. B. Davis Company.** Cocomalt—the scientific food concentrate that supplies a rich calcium, phosphorus and Vitamin D content in a particularly delicious form—is again being exhibited. Visit Booth No. 9 and enjoy some delicious Cocomalt served either hot or cold. Physicians report an ever-increasing use of Cocomalt in the diet. Interesting scientific data available.

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**The Foregger Co., Inc.** To see the latest developments in anesthesia apparatus, and to find out how the annual cost of anesthetic gas and ether may be cut to an absolute minimum, while at the same time increasing the efficiency of the anesthesia staff, pay a visit to the exhibit of the Foregger Company, Booth No. 1 and ask about the Filter method of anesthesia. A complete line of airways, endotracheal catheters and adapters and laryngoscopes will be shown.

There will also be a number of resuscitation units to be seen, besides oxygen therapy apparatus of simple and efficient design, inexpensive enough for the present day budget.

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**Gerber Products Co.** Visitors at Booth No. 5 will be shown the Gerber's Strained Cereal, Vegetables, and Prunes and given any information desired concerning the special process used in the manufacture of these products.

Booklets are available. One on infant feeding is intended for distribution by physicians to mothers and contains help on the technique of feeding without giving definite feeding directions. There are several publications on the use of these products in therapeutic diets, some for professional use only and others for general distribution.

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**H. J. Heinz Co.** Heinz Strained Foods for baby feeding, special soft diets, and convalescents are featured. The varieties are Spinach, Carrots, Peas, Green Beans, Tomatoes, Beets, Prunes and Vegetable Soup. Only fresh vegetables of select quality are used in preparing these products. A special vacuum process conserves in high degree the natural vitamins and mineral salts.

Other Heinz varieties being exhibited are Olive Oil, Rice Flakes and Breakfast Wheat. An outstanding feature of the Heinz cereals is their content of added Cereal Cellulose which has a gentle laxative action through furnishing bulk without irritation.

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**The Kalak Water Co. of New York, Inc.,** will occupy Booth No. 23 and invites physicians to visit the booth and learn how delicious and refreshing when properly served.

Obviously, the greatest use for Kalak Water is for routine use in the home when an alkaline water is indicated. It is generally recognized by physicians that the majority of people, and particularly those of sedentary habits, do not drink sufficient water, both for its value as a food and as an eliminant. Kalak solves this problem, for it combines purity and palatability.

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**Saratoga Springs Authority, Saratoga Springs, N.Y.,** Booth No. 10, will exhibit photographs and charts showing the treatments that are given at the State Sanatorium in addition to the display of bottled water.

The DeVilbiss Company, Toledo, Ohio, manufacturers of medicinal atomizers, will exhibit in Booth No. 13. The outstanding feature of this exhibit will be the new *vented nasal guard* which eliminates any possibility of excess pressure in the nasal cavities during prescribed self-treatment. In addition, a complete line of DeVilbiss Atomizers and Vaporizers (Nebulizers), for both home and professional use, will be displayed.

Mead Johnson & Company will have on exhibit its complete line of infant diet materials including Mead's Dextri-Maltose, Mead's Newfoundland Cod Liver Oil, Mead's Viosterol in Oil-250 D, Mead's 10 D Cod Liver Oil, Mead's (A-D) Viosterol in Halibut Liver Oil-250 D, Mead's Halibut Liver Oil, Mead's Brewers Yeast Powder, Mead's Brewers Yeast Tablets, Pabulum, Mead's Cereal, Sobee, Mead's Powdered Protein Milk, Mead's Powdered Lactic Acid Milk, Powdered Whole Milk, Alacta, Recolac and Casec. There will also be for the examination of physicians a complete line of Mead's services such as diets for older children, height and weight charts, etc., all of which are free to members of the medical profession in any quantity desired.

Representatives will be on hand to meet their friends and to discuss the application of any of the Mead products to infant feeding problems.

C. M. Sorensen Company, Booth No. 12, will have on display for your personal inspection several very interesting new models and combinations of Suction and Pressure Outfits, with their allied accessories for tonsil irrigation, coagulation and desiccation, where these are indicated in the treatment of the Ear, Nose and Throat.

Most efficient, compact and complete equipment ever designed—now available. A model for every purse and purpose. Scientific advancement in equipment is offered to you for your advantage and assistance in the daily problems of your Profession.

Radium Emanation Corp. An interesting and timely radium exhibit is to be a feature of the Annual Meeting of the Medical Society of the State of New York at Utica on May 14, 15 and 16. Representatives of The Radium Emanation Corporation of New York City will occupy booth 8, where you will find on display a large and varied assortment of radium and radon applicators and appliances specially designed to meet the present-day demands of the physician who would employ radium therapy scientifically and accurately.

The Radium Emanation Corporation has been serving the medical profession in North America since 1923. If you want first-hand information as to how you can personally utilize the radium resources and technical facilities of this organization, a visit to booth 8 should prove both interesting and profitable.

Fruit Belt Preserving Company, of East Williamson, New York, New York State's Famous Fruit and Vegetables now available for special diets.

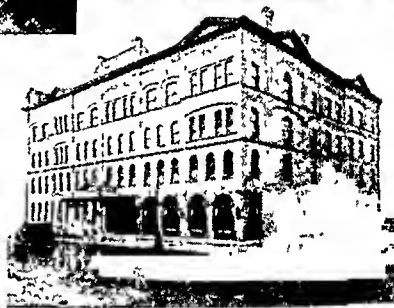
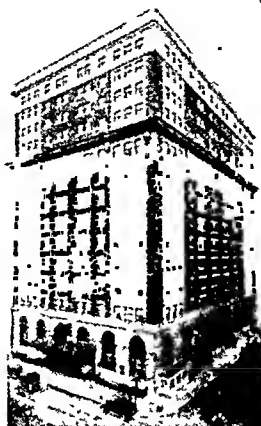
Pixie Strained Fruits and Vegetables, prepared by this Company, one of New York State's best known quality packers, are now available at pharmacies and food stores throughout the State. These products, prescribed where soft diets are indicated, come in nine varieties. Accepted by the Committee on Foods of the A.M.A.

Winthrop-Metz. At Booth No. 2 you will find an exhibit featuring such well known sedatives and hypnotics as Adalin, Phanodorn and Luminal; Pyramidon, the dependable analgesic; Salyrgan, potent diuretic for cardio-renal and hepatic dropsy; Novocain and Novocain Crystals for local and spinal anesthesia; and the Salvarsans. Attention is also called to the informative pamphlets, some of which are profusely illustrated, on these products as well as on a number of more recent introductions.

The Metropolitan Life Insurance Company in Booth 24 will present material on the communicable disease problem in New York State as indicated by figures from the State Department of Health, and the extent to which these diseases are getting the nursing service offered by this Company to its policyholders.

Miss Sara O'Meara, the Company's Nursing Supervisor for New York State, will be in charge of the booth and will be prepared to discuss this particular angle of the nursing service as well as to the service in general.

# U t i c a   H o t e l s



Hotel Majestic  
Sheriden's Hotel Montclair

Hotel Utica

St. James Hotel  
Hotel Martin

<u>Location</u>	<u>Accommodations</u>	<u>Rates Single</u>	<u>Rates Double</u>	<u>Manager</u>
HOTEL MARTIN 225 Bleecker Street	450 rooms—free parking space, garage in connection, official A.A.A. hotel.	\$2.50	\$4.50 and up	Wm. M. Martin
HOTEL UTICA 102 Lafayette Street	350 rooms—garage in connection	\$2.50	\$4.00 and up	G. F. Hale
SHERIDEN'S HOTEL MONTCLAIR 201 Lafayette Street	40 rooms—free heated garage in connection	\$1.25	\$2.00 and up	F. C. Tallman
HOTEL MAJESTIC 116 Lafayette Street	150 rooms—garage in connection	\$1.75	\$3.00 and up	Samuel Dean
ST. JAMES HOTEL 14 Whitesboro Street	100 rooms—free parking space	\$1.50	\$2.50 and up	W. H. Swarthout
HOTEL RICHMOND 6 Lafayette Street	60 rooms—free garage in connection	\$1.25 } \$1.50 }	and up per person	M. Pike
HOTEL YATES 42 Genesee Street	86 rooms—garage in connection	\$1.50 and up, per person		H. W. Luettu

# NEW YORK STATE JOURNAL OF MEDICINE

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## EDITORIALS

### Child Labor Amendment Dangers

The Medical Society of the State of New York is opposed to the ratification of the proposed Child Labor Amendment to the Constitution of the United States.

The Society is opposed to child labor, and at the same time is opposed to the amendment that ostensibly aims to end child labor.

Why this seeming inconsistency? If we are against child labor, why not support the amendment authorizing Congress to put a stop to it? The reasons for this paradox are clear as daylight if we stop to think the matter through.

First of all, President Roosevelt said in his message to Congress on January 3rd, "Child labor is abolished." The amendment, therefore, is not needed. In the next place, "all the states now have proper legislation covering the ages generally recognized as subjects of protection," according to Clarence E. Martin, former president of the American Bar Association. But the most weighty reason of all, the one that has roused the opposition of men we all respect, is that the amendment would give Congress powers that might easily become tyrannical and dangerous.

The vicious character of the amendment was so plain ten years ago, in fact, when

it passed the Congress, that the legislatures of 26 States promptly voted against ratification, and in 12 other States one house of the legislature opposed it. It was supposedly defeated, but now its supporters are starting a fresh campaign in the hope that the legislatures of to-day will reverse the verdict.

The proposed amendment reads:

"Section 1. The Congress shall have the power to limit, regulate and prohibit the labor of persons under eighteen years of age.

"Section 2. The power of the several states is unimpaired by this article, except that the operation of state laws shall be suspended to the extent necessary to give effect to legislation enacted by the Congress."

The "joker" in it, as it is called by no less an authority than former President A. Lawrence Lowell of Harvard, lies in the first section, which gives Congress full "power to limit, regulate and prohibit the labor" of all under 18. These words sound very mild and innocent, very much like those in the original constitution giving Congress the power "to regulate commerce . . . among the several states." When the Constitution was written, there was so little commerce among the several states that few probably gave this clause a second thought. Now no railroad dares draw its breath, or at least draw up a schedule of freight rates, without the permission of Interstate Commerce Commission. Space forbids even an enumeration of the acts of Congress, under this simple clause, reaching into the furthest corners of the nation and affecting every industry that ships so much as a peanut or a tin whistle across a state line. Now this new amendment uses the same word, and would empower Congress to "regulate" the labor of all under 18.

There are about 45,000,000 persons in the United States under 18 years of age, we are told, who would be subject to inspection and regulation by any bureau set up by Congress under this amendment. The measure makes no distinction between work for wages and voluntary work in the home or on the farm. Archbishop Glennon, speaking at St. Louis in December,

said: "We have no right to concede, you parents have no right to concede, to the United States Government, the right to regulate the lives of our children." President Henry S. Pritchett, of the Carnegie Foundation for the Advancement of Teaching, remarks that many find usefulness, happiness and their best development in gainful occupations before they are 18, and, he adds: "To confide to a Federal bureau in Washington the power to decide this question for all such persons in the United States is bureaucracy gone mad." The case cannot be stated better than in the words of President Lowell. In a radio broadcast on February 16 he quoted the proposed amendment, and said:

"This certainly grants authority to prescribe what work all young people up to eighteen years of age shall not do, and what they must do. It would empower Congress to forbid them to do any work, whether paid or unpaid, on any farm, garden or in the household, by way of assisting their parents or otherwise; to prohibit a youth whose father was dead from helping his mother by milking the cows or doing the chores out of school hours; or a girl whose mother had died from taking care of the younger children.

"So much for what Congress could do under the power to limit and prohibit work; but it can also regulate and therefore prescribe. Suppose, for example, it should ordain military drill for all boys. Would not that be a kind of labor? It certainly is not play. Will anyone assert that the Supreme Court would hold such an act unconstitutional as beyond the power conferred by this amendment? Is the supposition absurd?

"Let us not be dogmatic, or too sure what enthusiasm or excitement may or may not produce, but ask ourselves why should we confer authority if we do not want it used. Where power is granted there is always a tendency to use it.

"Much of the crime committed by young men at the present day is due to the fact that they have not acquired the habit of work and respect for it during the period when habits and character are formed. Work should not, of course, interfere with schooling, but outside of school duties it

is good if properly conducted. For a well-grown boy to help his father on the farm, in the garden, or in the family chores, with a sense of responsibility for the work to be done, is invaluable in teaching the serious aspects of life; and in the same way for the girl to take part with her mother in household labor is a normal preparation for the making of her own future home.

"Do we desire, as in the case of Prohibition, any army of officials to administer this amendment? Do we want them—outside of mechanical industry—supervising our young people, prying into private life, sending questionnaires to parents, under penalty if not answered or answered wrongly? Of course, we do not want such things; but if not, why grant the power with a childlike confidence that it will not be used in a way we do not like? Have we not had our lesson and suffered from it?"

The position of the Medical Society of the State of New York is that this is a State matter which should be handled by the legislature in cooperation with the State Medical Society, a body amply competent to see that the health of the children is fully protected.

### That Little "Drop of Ink"

It "makes millions think," if we are to believe the old adage, and there is no reason why the medical profession should not use it, within ethical limits, just as well as anyone else. An excellent example is afforded by the Medical Society of Westchester County, which has established cordial relations with the various newspapers throughout the county and furnishes medical information to them of the same nature as the New York Academy of Medicine gives to the press of New York City. Whenever a question arises as to the authenticity of any medical news, the editor can query the office of the society and get the right of it.

The newspapers of the county copy some item, article, or editorial from the society's Bulletin nearly every month. Sometimes an entire leading article is taken bodily and played up in a prominent position. In fact, a certain group of county



journals have declared it to be their policy to build up the County Medical Society in the public mind to the point where its attitude on any health subject will be taken as absolutely authoritative. Take, for example, the report of the Economic Committee of the County Society last November on the value of the free medical care given by physicians and surgeons in hospitals and dispensaries. The county papers give it the widest publicity. The resolution pointing out the dangers of too drastic cuts in county hospital appropriations was also broadcast all over the county by the press, and given hearty editorial endorsement.

The effect of all this on the public mind is excellent. What has been done in Westchester County can be done equally well in many other counties. With such publicity in the press, and with ethical health talks on the radio, such as some other County Societies are sponsoring, the influence of medical charlatans can be counteracted and the public can be brought into touch with proper medical advice and service.

### A Record Written in Human Lives

This State may well be proud of its record in providing medical and nursing care for its unemployed in 1933, and at the same time feel gratified at the low cost at which the service was rendered. The well-nigh incredible fact is that the medical care provided for the jobless in their homes or in the doctors' offices took less than 2 per cent of the total home relief expenditure during the year. In short, the average expenditure for medical care per family came to only \$4.21, or about the cost of a new hat. It should be kept in mind, too, that these figures do not include the ordinary clinic and out-patient services. They represent actual visits to the patient's home or consultation in the doctor's office.

We have another surprise when we run our eye over the table of figures and separate the items for city and country. The cost runs high in the country, it appears, and low in the city. Thus, the cost of medical care of the workless in cities of 100,000 and over was only \$1.94 per

year per family, about the price of a roast of beef for the Sunday dinner. In cities ranging from 50,000 to 100,000 it was \$3.17; in cities between 25,000 and 50,000 it was \$6.85; in cities under 25,000 it was \$6.81, while in the counties it rose to \$11.59, or nearly a dollar a month. Think of medical care at that figure. What price health! Almost a dollar a month! Less than many a man pays for shoe-shines. We see here a superb background of devotion to service by the men who cared for the jobless at these pitiful figures—often, no doubt, not enough to pay the doctor's actual expenses.

The nurses, too, played a splendid part in this fine work. A "double relief" plan was developed by the TERA in cooperation with the district state health officers and nurses, under which an average of about 200 nurses needing relief gave nursing care to the unemployed in nearly 60 communities. They made the amazing total of 30,000 to 40,000 visits per month at an average monthly cost to the state of less than \$13,000.00, or about 35 or 40 cents a visit! But were the nurses satisfied with this service? Not at all. It merely gave them an appetite for more, so they launched out into the promotion of local public health activities such as immunization campaigns, nutrition surveys, and child welfare activities. The plan of "double relief" became very popular, according to the State Department of Health, a statement that certainly "sounds reasonable," and during the last two months of the year the nursing service was expanded to include 500 to 700 nurses working in about 100 of the 116 welfare districts in the State.

A notable feature of the program was evolved with the aid of the State and county medical societies, cooperating with the State TERA in the State Department of Health. It provided a more uniform and effective medical service to unemployed families at a moderate cost to the state and local relief funds. A set of "Rules and Regulations Governing Medical Care of Home Relief Clients" was drawn up at the request of the then chairman of the TERA, Mr. Harry L. Hopkins. It was "formulated by a committee

comprised of Thomas Parran, Jr., M.D., state commissioner of health, and James N. Vander Veer, M.D., A. G. Swift, M.D., and H. W. Jones, M.D., representing the State Medical Society and H. Jackson Davis, M.D., a staff member of the State Department of Health who has been acting as Director of Medical Care for the Temporary Emergency Relief Administration. These rules and regulations were officially adopted without material change by the Relief Administration on March 3, 1933." Later, Mr. Hopkins became Federal Emergency Relief Administrator, and these regulations, with the approval of representatives of the American Medical Association and the United States Public Health Service, were adopted by the Federal Emergency Relief Administration in October last.

This record of New York State in caring for the health of the unemployed may well stir the pride of the profession, and if your good deeds are or are not written in shining volumes off somewhere beyond the stars, they are written in the happier and healthier lives of men, women and children here and now.

### **The More Prosperity, the More Accidents**

As the wheels of industry start to speed up, they begin again to exact their toll of life and limb which has been mercifully lowered during the depression. Statistics show that last year there were only 14,000 occupational deaths in the United States as compared with 20,000 in 1929. In other words, 6,000 people are alive today who would have been killed if prosperity and its accidents had continued. The nonfatal accidents, too, of course, rise and fall as the wheels spin faster or slower. They amount to a hundred times the number of fatal mishaps.

The statistical experts have reduced this to a science. It seems that for every ten thousand persons reemployed, anywhere from one to fifty or more will probably be killed within a year, according to the hazard of their occupation. So we are told by the Statistical Bulletin of the Metropolitan Life Insurance Company.

The curve of accidental injuries follows very closely the curve of employment it seems, despite all the achievements of accident prevention by many factories and, indeed, by entire industries.

What we have to keep in mind just now, too, is that many of the newly employed are inexperienced and so are more likely to have accidents, and even the old workers have been idle so long that they have lost a little of the knack of their trades, and may easily lose a finger or a hand in a lax moment. A word of caution from the physician to Jim and Bill and Mary and Kate as they return light-heartedly to work may be the very thing that will save them from disaster.

### **Blest Be the Ties That Bind**

The imagination is tempted to run riot with the possibilities conjured up by the splendid gift announced at the dinner of the Pan American Medical Association. The anonymous donor is giving a sufficient sum to enable 42 young physicians from 21 Latin American countries, including Puerto Rico, to have a year of postgraduate training in United States hospitals. And more than that, it is hoped that funds will be provided to send 42 young United States physicians to spend a year as internes in South American hospitals. Each interne is to receive \$30 a month in addition to his traveling expenses and a year's subsistence. The announcement was made by Dr. Harlow Brooks, Vice-President of the Pan American Association, who allowed it to be known that the donor is a noted New York philanthropist who is interested in promoting a better understanding between the peoples of North and South America. The two representatives from each Latin American nation will be selected immediately by the organized medical profession of their country, and it is expected that they will all arrive here some time this spring and will be assigned to the large medical centers throughout the United States. It is hoped that such exchanges will be continued in future years.

Our rapidly growing trade with Latin America, the expanding tourist traffic, the fast, luxurious steamers, the airplane lines,

are all cementing the people of the northern and southern continents in closer and closer ties year by year. This warm hand-clasp of the medical professions, however, has something intimate about it that goes far deeper than the contacts of trade or the curiosity of the tourist. Men who have worked side by side in the hospital wards fighting the battles of life and death form friendships that endure. Here will be a tie that no other nations in the world enjoy. It is something new in international relations, founded in wisdom and based on the bedrock of common sense.

It must not be lightly supposed, either, that the advantages of this arrangement is all on one side. True, we can teach Latin America more or less in a medical way, no doubt, but we can learn, too, from these splendid young fellows who are to be our guests. Latin American culture has fine qualities about it that we can well assimilate. North America is the land of efficiency, of hurry, bustle and go-getting. But the Latin American has learned how to live—the North American hasn't found time for that yet. These young *medicos* are coming here to try to learn something from us that they can carry back to help their own people. Let us see if we cannot learn something equally valuable from them.

### "Doctor" Shoes—What Next?

Quite a bit of comment in the medical journals and the organs of the boot and shoe trade has followed the discovery by a New York orthopedist that no less than 189 trade names for shoes carry the word "Doctor." They are "Dr. Blank's Shoes," or "Designed by Dr. So-and-So." Two questions rise at once—are the shoes really designed by doctors, and, if so, how can a doctor make any one shoe design for hundreds of different shapes of feet that he has never seen? "Since every foot differs from every other one," observes the *Jour. A.M.A.*, "it should be apparent that no shoe constructed according to a standardized type could be quite adequate for any deformed or weakened foot." Dr. Norman D. Mattison, of New York, has called the attention of the Federal Trade

Commission to this matter, and the Commission replies that it "is now being considered with a view to correction."

A moment's thought shows how ridiculous it is to suppose that an ordinary shoe salesman can take a pair of "Dr. Blank's Shoes" from a shelf and make them fit a buyer whose foot needs a special last. Journals of the shoe trade both here and abroad see how indefensible this advertising claim is. The "doctor" brands "are based upon 'bolony'," remarks the *Shoe and Leather Record*, of London, and it believes the trade here would do well to rid itself of a large number of them.

The tendency of such a practice is only to cheapen the value of the word "doctor." If we are to have 189 kinds of "doctor" shoes, how long before we shall have a thousand kinds of "doctor" hats, socks, handkerchiefs, pajamas and what-not? The profession is already plagued to distraction by the platoons of charlatans and mountebanks who pose as healers and miracle workers—why should the shoemakers, butchers, bakers and candlestick-makers join their ranks and pretend to be "doctors?"

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### A Crook Born Every Minute, Too

As fast as the crooks are put behind the bars a new crop seems to appear, as if the powers of darkness were feeding an endless supply of sharpers into our poor old world, afflicted enough already. It is a bit discouraging to realize, as we fight to cut down the infant death rate, that we are undoubtedly saving the lives, among the rest, of hundreds and perhaps thousands of future crooks. The baffling thing is that a baby crook can look and coo just as sweetly as a baby seraph, so nothing can be done about it at that stage, anyway.

What brings the painful subject up just now is the news that our old friends, the eyesight swindlers, are operating in Kentucky. Other states have experienced their delicate attentions many times in the past, but for some reason Kentucky has escaped their notice till now. They are there, however, with their "radium water," their "radium belts," etc. According to reports from Kentucky physicians, these rascals

first offer to treat the eyes of the afflicted person with the magical radium water, on an advance payment of several hundred dollars, with a guarantee that the money will be refunded unless the patient is definitely cured in a stated time.

Before the time is up, however, another member of the gang appears with the bad news that the radium water man has been killed in a motor accident, but that he has a marvelous radium belt that is just the thing for the patient's case. It is not for sale. No, no. Money would not buy it, for it is the only one of the kind in existence. The patient can rent it, however, for a small sum, if he will put up a large sum to guarantee its safe return. Of course, the swindler never comes back for the belt, and the money is lost.

If the supply of swindlers is endless, the supply of gullible—shall we say suckers—seems equally so. If the radium water and belt peddlers are driven from Kentucky, they are just as likely to turn up in this State as any other. At the first news of them the police should be put on their track.

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### Drug Pirates

Raids by the New York City police have uncovered a nefarious business that will rouse the concern of every physician. What the officers found was nothing less than a plant that has been distributing fake drugs, proprietary medicines and toilet preparations. Labels, boxes, bottles, cartons, all were imitated to the last point of perfection. But the products inside were spurious. Headache tablets were made of talcum powder. Colored and flavored water masqueraded as cough medicine. What purported to be famous brands of patented medicine were discovered to contain actually harmful ingredients. A large bottling works was discovered that had every appearance of a branch of a famous fountain-drink concern. The delivery trucks, the employees in natty uniforms, the cases, the bottles, were all exact duplicates of the genuine ones. But the entire outfit was a fake.

Druggists interviewed say that this rascally work has been going on for some

five years. Nothing escaped imitation. Tinted and perfumed flour is sold under the guise of a well-known brand of talcum powder. Reputable druggists who pay around \$1.15 an ounce for an ephedrine product are offered a substitute for \$1.35 a pint. Spurious aspirin tablets, marked and boxed like the genuine, are offered at a huge reduction. Recall the large percentage of prescriptions that contain aspirin, and the harm done by cheap and worthless substitutes is apparent.

Remember, too, that the druggist who handles these products may not know that they are fakes. The piratical distributors represent them to be genuine, and give reasons, very plausible in these times, why prices are so low. However, the word has gone around about this sort of bootlegging, and the druggist who has not heard about it must be a rarity. One high-grade dealer, whose store has been in the same family some seventy-five years, says that the spurious stuff is marketed through the "five-board" drug-stores, third-rate outfits fitted up and run "on a shoe-string." No doubt it would not be beyond these bandits to operate drug stores of their own.

Another druggist expressed his fear some two or three years ago that his trade would be ruined by competitors selling imitation products at prices below the wholesale figure, but the fact that he is still doing business at the old stand seems to show that a goodly section of the public appreciates character and quality, especially when it affects their health and perhaps their lives.

One great difficulty of the situation is that the criminal laws fail to apply adequately, and in many cases the only recourse of the manufacturer whose product is imitated is a civil suit. Then, too, the drug faker can skip nimbly from city to city, from state to state, until it is almost impossible to stop his chicanery. The physician can do much to protect his patients by recommending druggists of high character and conscience. Legislative committees can urge the adoption of laws to put these unconscionable enemies of society behind the bars.

## Correspondence

*Anonymous letters will not be noticed. All communications must carry full name and address of the writer but these are omitted on request.*

### To the Editor

Perhaps while Uncle Sam is feeding us all alphabet soup' with an entree of codes and a salad of new planning, it is timely to offer a somewhat radical idea for the reestablishment of the family physician. Within the profession there is an opinion, increasingly expressed, that the field of general practice is being neglected for that of specialism.

There is no need to review here the changes in medical practice which have led to the present extent of the public assuming the role of medical adviser. Since the beginning of history, there have been cults and pseudoscientists who have sought to be guides in all matters pertaining to health, but to-day more or less everyone seems to have advice to offer and practically everything that is advertised depends, for its sales appeal, on some benefit to health and well being. The public has never before been so health conscious. Mostly through our own efforts, a smattering of the medical sciences has been spread abroad and, based on this primitive knowledge, the responsibility of diagnosing and prescribing is assumed by all. Where a physician might hesitate almost any layman recommends this or that medicine or treatment thoughtlessly and sometimes disastrously. The senselessness of paying a fee for advice as to a cough mixture or a cathartic when the radio and "The Doctor's Advice" columns give it free is only too apparent. And as to food, clothing, climate, recreation—why consult a physician unless one is actually ill. Nevertheless, if everyone had a family physician upon whose interested advice he felt he could confidently rely, this state of affairs would change almost automatically.

There is much complaint about the assumption of the status of specialist by doctors who are not fully equipped by study and experience to do so. The specialist was formerly the product of long years of service in general practice, with the development of special skill in a particular field and, finally the concentration of his entire attention exclusively to one system or to one region of the body. It was an end reached by natural growth. To-day a specialty is often selected by the premedical student and his education is consequently narrowed as much as possible to that subject. It is reported that MacKenzie, when asked by an American doctor what course to follow to fit himself as a heart specialist, advised his inquirer to return home and take up general practice for fifteen years.

Various medical journals are commenting rather severely on the fact that some recent graduates of the medical schools seem to know very little about the use of drugs or even how to write prescriptions for them. They know the theories of vaccines, serums, and organic products but of the action of drugs that have proved their value they know nothing. Dr. Thomas A. McGoldrick, of Brooklyn, remarks

As a rule, the layman seeks the specialist who treats the organ which to him seems to be at fault, but very often the etiological factor lies elsewhere. The duties of the family physician have been usurped by salesmen, boards of health, and specialists.

With this sketchy description of the present unsatisfactory conditions prevailing in the practice of medicine, let us propose our remedy. We do not expect you to accept it without studying its probable effects, but we beg you to at least give it some consideration before tossing it aside as impracticable. It seems to us that this remedy would purge the profession of pseudospecialists, elevate the family physician to the place of honor and importance he richly deserves, discourage laymen and organizations from practicing medicine and make more orderly the at present haphazard methods in vogue pertaining to the care and preservation of life.

This remedy is to establish the specialist as an instrument to be used solely by the family physician, the specialist seeing no patients except those referred by a family physician.

JOHN JOSEPH NUTT

### To the Editor

There has been sent to me a copy of your review appearing in the February 15th issue vol. 34, page 174 of the *NEW YORK STATE JOURNAL OF MEDICINE*, of "The Diseases of Infants and Children" by J. P. Crozer Griffith and myself.

It would seem quite unbecoming for an author to make any particular comment on a review of his book, but I do feel that there is a misstatement in it which might be called to the attention of the reviewer. According to the copy sent me there is a statement that in the treatment of chorea there is no mention of the newer shock methods such as nirvanol and typhoid vaccine.

The treatment with nirvanol is mentioned at some length on page 878, and there is reference to Sutton's work on foreign protein therapy for the production of fever, with the reference given. I think that it is quite probable that more space might have been given to the treatment by foreign protein therapy, although I think also that the comments made on treatment of chorea in general on page 878 quite obviate the necessity for discussing the numerous treatments advocated.

A. GRAEME MITCHELL, M.D.

in the *Medical Times* that it shocks doctors who were graduated many years ago to learn that medical schools to-day do not teach *Materia Medica* and *Therapeutics* as they understand the terms. He is not surprised that so many young doctors write a prescription for the same ingredients which the druggist could put up at a fraction of the cost to the advantage of both patient and physician.

# Society News

## The School Health Program for the Hard of Hearing Child

### 2. The Rural and Urban Projects in Westchester County

ANNETTA W. PECK

*Executive Secretary, The New York League for the Hard of Hearing, Inc.*

It is proposed to show in this article, which is the second of the series sponsored by the committee on the deaf and the hard of hearing, how two projects, conditioned by contrasting environments, rural and urban, were initiated and conducted and how they have succeeded in their purpose of discovering, examining and making educational provision for children with permanently impaired hearing, or having ear and throat conditions pointing to impaired hearing if neglected. Referring back to the committee's announcement in a previous issue of this journal (February 1, 1934) let it be understood that the children under consideration are not deaf (anacusis, having no hearing), deaf children being few in number and presenting, comparatively speaking, a problem which is mainly educational but which in some of its aspects is receiving the attention of this committee. The committee's preoccupation with the child who is beginning to lose his hearing is a reasonable one; first, because there are many such children in our public schools; second, because the probabilities for successful preventive work are great. Beginnings have been made and it is the purpose of this and succeeding articles to describe several which may be observed within the boundaries of this State.

Work in this field of conservation of hearing requires a certain psychological approach on the part of the physician, nurse, teacher or social worker. For untold ages any defect in hearing power, no matter how slight, has been approached, psychologically speaking, through the concept *deaf-anakousia*, no hearing. Conservation of hearing approaches the hearing impairment from the opposite quarter, as something which has dropped from the norm—*hypokousia*, less hearing—but which is not by any means a conclusive condition. It is, in fact, one which possesses strongly hopeful elements. Early discovery may lead to medical amelioration and certainly to

study the two projects now functioning in Westchester County.

The rural project, although the younger, will be given precedence. This hearing survey of the Second Supervisory District of Westchester County was conducted in April and May, 1933, by Mrs. Eleanor Ronnei, teacher of lip reading and speech correction in the Valhalla public schools. Mrs. Ronnei, who is an active member of the Lip Reading Teachers Auxiliary of The New York League for the Hard of Hearing, first enlisted the interest of the school nurses of the district, who in turn consulted the various school physicians. The latter proved cordially cooperative and their permission was received before any further steps were taken. The League loaned two of its audiometers, both the 4A and the 2A. Mrs. Ronnei loaded them into her car and set forth among the small communities of the district. Two thousand two hundred eighty-five elementary school children from the third year on were tested with the 4A audiometer in eight villages: Armonk, Briarcliff Manor, Hawthorne, Pocantico Hills, Purchase, Thornwood, Tuckahoe and Valhalla. Retest was then made with the 2A audiometer of 124 children whose 4A audiograms indicated poor hearing. Otological examination of these children was the next step. There are no specialists in this rural district, so Mrs. Ronnei sought the cooperation of Dr. J. R. Emery of White Plains. Dr. Emery was already familiar with the school hearing program developed by The New York League for the Hard of Hearing, as he had worked in the League's clinic at Manhattan Eye, Ear and Throat Hospital under Dr. Edmund Prince Fowler, Director of Research and Clinics of the League. He generously gave time and services; Mrs. Ronnei drove him among the villages and in six of them 101 children received otological examination. Here is the statistical report of the survey:

Village	Total exam.	IHB	IHR	IHL	Retest	History	Examined Otologist	Definite L R cases	L R cases pending	Otological and retests
	4A	4A	4A	4A	2A					
Armonk	135	9	3	8	6	21	4	2	4	0
Briarcliff Manor	302	13	21	22	7	137	0	1	4	2
Hawthorne	158	11	5	9	10	76	4	4	4	0
Pocantico Hills	95	5	3	2	8	19	6	4	4	0
Purchase	61	3	8	2	0	29	0	1	2	0
Thornwood	231	12	8	5	12	136	9	4	5	3
Tuckahoe	839	69	120	82	67	196	64	26	23	18
Valhalla	464	19	18	15	14	121	14	10	3	1
Totals	2285	141	186	145	124	635	101	52	49	26

educational as well as psychological compensations. Again, we can get much farther with educators, teachers, family doctors and above all, with parents, if we use this approach and point the way to hope. Let us avoid the zero, *deaf*, and keep good hearing, better hearing, conservation of hearing, hopefully before our minds as we

This survey so keenly interested District Superintendent Cheney that he is now endeavoring to interest the villages of Armonk, Hawthorne, Pocantico Hills, Thornwood and Valhalla in the joint purchase of their own 4A audiometer. This will make possible the annual survey which is generally advocated as part of the regular

school health program, not only for the five villages named, but also for the nearest smaller communities, fourteen in all.

The Valhalla lip reading teacher, Mrs. Ronnei, is instructing some of the children in lip reading. Three villages, Hawthorne, Pocantico Hills and Tuckahoe, are awaiting at present the decision of the State Department of Education regarding a grant to cover a teacher's salary. The itinerant teacher plan seems to be the most practical way to provide lip reading and at the same time keep the children in their natural school environment among their normally hearing schoolfellows, a condition which is of the utmost importance to the normal psychological development of these hard of hearing children, who, after all, are normal children. Their slight hearing loss is no greater handicap, when they have received instruction in lip reading, than myopia or astigmatism when corrected by suitable glasses, and much less of a handicap than cardiac lesions or rickets, since they are able to profit fully from active competition in the playground as well as in the classroom. Segregation of such children is not desirable or necessary and is considered injurious to development of a normal personality with which to

Other includes  
has been sur  
A. Pratt, "ster County  
which have  
Dr. Emily  
bureau, State  
Department of Education, has also surveyed or loaned an audiometer for surveys in Hartsdale and Greenburg, and we believe also in Yorktown Heights, Pleasantville and Portchester. There is undoubtedly a great field for work in conservation of hearing among the central Westchester villages.

White Plains, as befits the county seat, first introduced conservation of hearing into its schools, to be followed by Ossining-on-Hudson, where the school physician, Dr. M. Mary Rohn, has set up the routine of surveys, retests, examination and lip reading. In White Plains, where the school enrollment is about 7000, Dr. Dorothy Worthington, also a school physician, made a study of the subject in 1929. She interested the school board and the local otologists, a 4A audiometer was purchased and surveys were begun. She then consulted the New York League for the Hard of Hearing, from which she had received her initial information, regarding a lip reading teacher and the League recommended Mrs. Alice Howe Hatton, who began work in March, 1930. Mrs. Hatton has the distinction, although still a young woman, of being the pioneer in lip reading instruction for the hard of hearing child, her first work in this field having been done in the Rochester public schools from 1916 to 1924.

Again the itinerant teacher plan seemed the only practical way to teach lip reading to the twenty-five children who had been tested, retested and examined, as they were located in four different sections of the city. In order to reach them for two periods a week, Mrs. Hatton made use of her own car, driving from school to school. Among these children were several whose im-

paired hearing had made them distinct school problems both academically and in social adjustment. Within three months their teachers were enthusiastically reporting improvement on both counts. The four groups have been brought together for annual contests and demonstrations before audiences of school nurses, physicians, mothers and school officials.

An annual program has been adopted which provides for hearing tests for one-half of the schools (elementary and junior high) with examination of all third grades, new pupils and children previously found to have hearing losses, every year or oftener. Testing is done and also correction of papers by the school nurse and the lip reading teacher. They are deeply conscious of the fact that the retest with 2A audiometer should precede the otological examination, but this essential equipment has not yet been purchased and audiograms cannot be made. There is hope that a 2A will be made available. The otological examination is considered part of the regular school health examination, and the White Plains school health record card pays due attention to hearing and to the lip reading department.

Examination began with one physician, and has increased to four. Some of the children are examined by private physicians, but the majority of the examinations are done in the school nurse's office and if the parents are not present a full report is sent to the home. Early in 1933 the White Plains Hospital opened an Ear, Nose and Throat Clinic, where some remarkable work has been done with acute cases. There is fine co-operation between the clinic and the school nurses, but for all that there are many difficulties. Many children are too poor to pay the clinic fee and this necessitates a visit to the Welfare Department before going for treatment. The clinic is overcrowded. Parents are frequently uncooperative, and not only must their outlook be changed but also that of the family doctor upon whose opinion they place implicit reliance. The latter frequently does not realize that small ear trouble . . . of developing into . . . social problems. Bette: . . . and coordination . . . clear up these administrative difficulties, give the White Plains hard of hearing children the 2A retests and clinical service they need, teach the parents the importance of good hearing and at the same time enlist the moral support and active aid of the general practitioner. The statistics follow:

Hearing Tests in White Plains Schools	1931-32	1932-33	1933-34
Tested by 4A audiometer..	2589	2824	1207
Retested (4A) .....	89	671	....
Potential cases .....	116	214	218
Referred for ear examinations	(4.48%)	(7.37%)	
Otological examinations ..	86	185	184
Impacted cerumen cases....	17	35	28
Needing treatment .....	18	77	47
T & A removed .....	..	80	61
Recommended for lip reading	28	59	38

480 LEXINGTON AVENUE

A weekly diet costing 5s 10½d (about \$1.50) as a minimum for adults has been unanimously approved by the Council of the British Medical Association. It provides 3,400 calories and

50 gm. of first-class protein daily. Too much! said the Government Ministry of Health, which declared a daily total of 3,000 calories and 37 gm., costing about \$1.20 a week, sufficient.

# Medicolegal

By LORENZ J. BROSNAN, ESQ.  
Counsel, Medical Society of the State of New York

## CHARITABLE HOSPITALS—EXEMPTION FROM LIABILITY FOR NEGLIGENCE OF NURSE

An excellent example of the application of the rule which ordinarily exempts a hospital, organized not for profit, from liability for negligence, is shown in an interesting case recently decided in one of the mid-Western States. The case was one in which the suit was based upon an unfortunate incident in connection with a mistake as to the identity of two babies.

A certain man named G., brought his wife and their week-old baby to the hospital in question to be cared for. Some days later the wife died and the husband took the body of his wife to another city for burial. He made arrangements meanwhile with the hospital that he should pay a dollar a day to the hospital, and was assured that the baby could remain there and receive the best of care. At about the time of the birth of the child so left in charge of the hospital, the daughter of a certain V. had given birth at the same hospital to a child. That child was the issue of an incestuous relationship between Mr. V. and his daughter. When the daughter was ready to leave the hospital, she also arranged to leave her child behind. V. called at the hospital to get his baby and through the carelessness of one of the nurses, the wrong baby was given him, and he received the child of the first man. The nurse had confused the two men and had thought she was delivering the baby to G. When G. called for his child he was offered the other baby and the mistake was discovered. Efforts were made to right the mistake but the G. baby was not recovered. It seemed that V. had disposed of the child in some manner, his story when questioned about it being that he had given the child to some strangers who had passed through the town in an automobile.

The father of the missing child brought an action against the hospital, charging it with both negligence and breach of contract. It was unquestioned that the hospital was a corporation organized under the laws of the State as a nonprofit institution. Upon the trial there was very little dispute as to the facts. Unquestionably the nurse

had been negligent, but the Trial Court would not permit the hospital to be held responsible for her negligence. The plaintiff attempted to show that the hospital had been negligent in hiring the nurse, but failed for proof was put upon the record that the nurse whose wrongful act was the basis of the action was properly qualified. When the act occurred, she had been in the hospital's employ as a registered nurse for some three years, and prior to that she had had three years' additional hospital training. Upon the trial the plaintiff recognized that he could not possibly hold the hospital, a nonprofit organization, for the negligence of its servants and discontinued the action so far as brought on a theory of negligence. The plaintiff, however, sought to hold the hospital on the theory that the hospital had expressly contracted to care for the baby at a stipulated fee, and to return it to the plaintiff when called for, and that it had breached the terms of said contract. The Trial Court denied recovery upon the said theory, applying the same rule of exemption as in an ordinary tort case. The plaintiff also sought to show, as a means of circumventing the application of the charitable-hospital rule, that the defendant hospital carried liability insurance, contending that if insured against loss the reasons for exempting the hospital from liability should not be applied. Such proof was excluded as improper. Judgment was entered in favor of the hospital.

An appeal was taken to the Appellate Court of the State, and that Court after careful consideration, affirmed in all respects the ruling of the lower Court. It found that the grievance of the plaintiff actually was based on a negligent act, and that the law of negligence should be applied regardless of how he had technically designated his action. It said:

"Naming or labeling a count *assumpsit* (contract) does not make it such, when it is apparent on its face that it is one in tort. Nor is there any magic in the use of one term instead of another, when the gravamen of the act complained of is the negligence or mistake of a



servant of an eleemosynary institution exempted from liability by law under these circumstances.

The Court quoted the principles behind the so called Charitable-Hospital Rule as follows

If the contention of the learned counsel for the plaintiff be true, it follows that the charity or trust fund must be used to compensate injured parties for the negligence of the trustees or architects and builders, upon whose judgment reliance is placed as to plans and strength of materials, of physicians employed to treat patients, and of nurses and attendants. In this way the trust fund might be entirely destroyed and diverted from the purpose for which the donor gave it. Charitable bequests cannot thus be thwarted by negligence for which the donor is in no manner responsible. If in the proper execution of the trust, a trustee or an employee commits an act of negligence he may be held for his negligent act, but the law jealously guards the charitable trust fund and does not permit it to be frittered away by the negligent acts of those employed in its execution. The trustees of this fund could not by their own direct act divert it from the purpose for which it was given or for which the act of the legislature authorized the title to be vested in the defendant. It certainly follows that the fund cannot be indirectly diverted by the tortious or negligent acts of the managers of the fund, or their employees though such acts result in damage to an innocent beneficiary. Those voluntarily accepting the benefit of the charity accept it upon this condition.

The fact that patients who are able to pay are required to do so does not deprive the defendant of its eleemosynary character, nor permit a recovery for damages on account of the existence of contract relations. The amounts thus received are not for private gain, but contribute to the more effectual accomplishment of the purpose for which the charity was founded. The wrongdoer, in a case of injury, but not the trust fund, must respond in damages. This proposition seems too clear to require argument or authority. It is not, however, inappropriate to remark that better facilities for the care, cure and treatment of the sick, both of the poor and of those who are able to pay, are secured by the establishment of hospitals like that of the defendant. These facilities are increased by the receipt of money from those who are able to pay in whole or in part for the benefits received. Several hospitals of this character exist in this state founded by private munificence. Obviously, they would not have been founded if their donors had known or ever supposed that their charitable purposes might be thwarted by the verdicts of juries for the negligent acts of those who must necessarily be employed in the execution of the charity.

The Court in its opinion also referred to a case that was decided in New York State some years ago, in which an attempt was made to hold a charitable hospital liable in damages arising out of an alleged breach of contract. The charge there was that the hospital had agreed to keep a constant and continuous watch over an insane patient, and failed to keep such watch,

whereby the patient threw herself from the window and was killed. The New York Court denied liability and said

But the contract was to keep a constant watch and guard. It was not to prevent the unfortunate patient from committing suicide. Nor could it fairly be held to be within the reasonable intendment of this contract that the hospital agreed to pay to the husband the value of his wife's life to him in case she did commit suicide. There has been no case cited to us nor have we been able to find one which allows a recovery upon such a complaint or such a state of facts. Nor can we see any reason why there should be a different rule where the tortious act which caused death is alleged to be a breach of an express contract from that declared where it is alleged to be a breach of an implied contract or where no contractual relation at all existed.

### Claim of Negligence in Tracheloplasty

A doctor who had for many years specialized in surgery was called to the home of a married woman about 35 years of age. She complained of having suffered pain for about two weeks and gave a history of persistent discharge from the vagina.

After a physical examination, the doctor made a diagnosis of eroded bilateral lacerated cystic cervix, slightly relaxed perineum, and an acute attack of endocervicitis. He recommended an operation and two days later performed it.

The doctor made a cone-shaped incision of the cervix and after separating the cervix from the vaginal mucous membrane, excised the infected tissue. The mucous membrane was then sutured to the cervical mucosa following the technic of Sturmdorff. The cervix and vagina were then packed with gauze and the patient returned to her bed.

The surgeon took charge of the post-operative care of the patient and removed the packing 60 hours after the operation. No untoward complications developed in the case until nine days after the operation at which time she expelled a clot of blood and the wound was packed by the house surgeon. The following morning the doctor in charge of the case found her condition to be satisfactory. He removed the packing and there was no further bleeding.

A week later she was discharged from the hospital. At the time of the discharge the doctor did not examine her vaginally for fear of setting up an infection or hemorrhage.

A lawsuit was thereafter instituted against the surgeon, claiming that the operation which he performed was done neg-

ligently and that it was subsequently necessary as a result of his operation for the patient to undergo another operation for the removal of her uterus. The case came on for trial and the medical witnesses who took the stand on behalf of the plaintiff failed to establish that the defendant's operation necessitated the subsequent removal of the patient's uterus, for it came out that the actual cause for the subsequent operation was a tumor which later developed. The case, however, was sent to the jury to determine the truth or falsity of the plaintiff's story that certain gauze packings had remained in the uterus and vagina several days longer than proper and whether the woman was discharged from the hospital by the defendant while she was suffering from a hemorrhage.

The jury returned a verdict in favor of the defendant, thereby rejecting the testimony of the plaintiff and her witnesses and exonerating the defendant from all charges of malpractice.

#### Claim of Negligence in Connection With Use of Lane Plate

A man about 32 years of age was assaulted by ruffians and was found unconscious and taken to a municipal hospital where examination showed that he had a fracture of the right leg just above the ankle. His injuries were treated and the leg put in a plaster cast. Upon his return to consciousness he suffered continuous pain and after about two weeks he was transferred to another hospital and the care of a certain specialist in surgery.

The said doctor caused an x-ray examination to be made of the limb and found a fracture of the right tibia and fibula about 4 inches above the ankle joint with the fragments displaced outward and backward and about one inch overriding. He undertook to reduce the fracture and to secure a satisfactory alignment by a closed method, but because of the length of time that had elapsed since the injuries were sustained the doctor was unable to accomplish his purpose.

A few days later he had the patient put under a general anesthetic and made an incision over the lower third of the fibula in the region of the fracture. The bones were placed in correct apposition and a Lane plate with four screws was inserted. Plaster splints were applied, and x-rays taken after the operation showed that the

position of the fragments continued to be good. Subsequent x-rays were taken thereafter from time to time until about ten weeks after the operation, when the doctor decided that callous having formed the Lane plate had served its purpose; therefore he performed an additional operation and removed the plate from the tibia.

The patient's leg was placed in a cast and was treated by the doctor regularly for a period of about three months during which time the man's condition improved very well. At about the time he was to be discharged he suddenly developed a pain in the region of his knee. The cast was removed and the knee found to be swollen. Wet dressings were applied to this region, and a few days later the doctor aspirated the knee joint and found pus. He made an incision on both sides of the knee introducing a tube for drainage. The wound continued to drain and the knee cavity was syringed daily, this treatment continuing for several weeks. During this time the doctor decided that in order to obtain proper drainage it was necessary for the knee to be held in a flexed position with the leg at almost right angles with the femur. During the period of time in which the knee was held in such a position, little progress was made in passive motion to prevent ankylosis by reason of the great pain which it caused the patient. The inflammation and infection finally subsided after a total period of hospitalization of over a year. At the end of that time the patient was discharged from the hospital by the doctor and advised to go to another hospital for baking treatment to alleviate the condition of ankylosis which had developed. The patient apparently sustained as an end result considerable loss of motion in the knee.

An action was instituted against the doctor charging him with malpractice in connection with his treatment of the patient and specifically making the claim that the introduction of the Lane plate and its subsequent removal were the cause of the prolonged period of hospitalization and of the man's loss of the use of his leg. The action finally came on for trial before a judge sitting without a jury and at the close of all the testimony introduced the court ruled that the plaintiff had failed to prove that the treatment rendered by the defendant had been in any respect improper and therefore directed judgment to be entered in favor of the doctor.

# Books

## BOOKS RECEIVED

[Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from this column will be made for review, as dictated by their merits, or in the interests of our readers.]

**A System of Clinical Medicine** Dealing with the diagnosis, prognosis, and treatment of disease for students and practitioners. By Thomas Dixon Savill, M.D. Ninth Edition. Octavo of 1063 pages illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$9.00.

**A Synopsis of Surgery** By Ernest W. Hey Groves, Tenth Edition. 16mo of 693 pages. Baltimore, William Wood & Company, 1933. Cloth \$5.00.

**Human Embryology and Morphology** By Sir Arthur Keith. Fifth Edition. Octavo of 558 pages illustrated. Baltimore, William Wood & Company, 1933. Cloth \$10.00.

**Neuroanatomy** A Guide for the Study of the Form and Internal Structure of the Brain and Spinal Cord. By J. H. Globus, M.D. Sixth Edition. Quarto of 240 pages illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$3.50.

**Food and the Principles of Dietetics** By Robert Hutchison M.D. and V. H. Mottram, M.A. Octavo of 630 pages. Baltimore, William Wood & Company, 1933. Cloth, \$7.25.

**Life Giving Light** By Charles Sheard Ph.D. 12mo of 174 pages, illustrated. Baltimore, Williams & Wilkins Company, 1933. Cloth, \$1.00.

**The Medical Clinics of North America.** Volume 17, No. 4, January, 1934. (Cleveland Clinic Number.) Published every other month by the W. B. Saunders Company. Philadelphia and London. Per Clinic Year (6 issues) Cloth, \$16.00 net, paper, \$12.00 net.

**Influenza** By David Thomson and Robert Thomson. Quarto of 640 pages illustrated. Baltimore. Williams & Wilkins, 1933. (Volume IX December 1933 of *Annals of the Pickett Thomson Research Laboratory*, Monograph XVI, Part 1.)

## BOOKS REVIEWED

**Starting Principles of Human Physiology** Sixth Edition, edited by C. Lovatt Evans, D.Sc. Octavo of 1122 pages illustrated. Phila., Lea & Febiger, 1933. Cloth, \$8.75.

The manner of presentation, the general handling and the subdivisional arrangement of subject matter are quite the same in this sixth as in the fifth edition of Starling's Well known *Principles of Human Physiology*. Comparative page to page perusal of the two editions, however, clearly indicates painstaking revision of its text throughout. Some shifting of paragraphs and sub sections, many verbal changes and judicious incorporation of subsequently developed material afford abundant evidence of the editor's successful endeavor "to keep its contents representative" without undesirable enlargement of the book, the bulk of which has been but slightly increased. The illustrations, too, have been reviewed with regard to the requirements of the revised text, a few having been eliminated, but a sufficient number added to increase the total by nineteen. What has been said of the volume as a whole, under the editorship of Professor Evans, applies specifically to its Book III, *The Central Nervous System and Special Senses*, which makes up nearly a quarter of the volume and for the excellence of which Professor Hart-ridge deserves commendation. The general satisfaction of this sixth edition assures continuance of the widely appreciated value of the book as an aid in the scientific teaching of human physiology.

J. C. CARDWELL

**Maternal Mortality in New York City. A Study of all Puerperal Deaths, 1930-1932.** By the New York Academy of Medicine Committee on Public Health Relations. Ransom S. Hooker, M.D., Director of Study. Octavo of 290 pages. New York, The Commonwealth Fund, 1933. Cloth, \$2.00.

This is an honest interpretation of a large group of figures traced from every angle. The difficulty in reading and studying such an enormous number of statistics is admirably overcome by the interesting text. The matter divulged

seems to be an indictment against physicians and places upon their shoulders most of the responsibility for the end results.

However, a more careful analysis reveals that the bulk of obstetrics in New York City is done by physicians and of necessity they are obliged to handle some of the greatest obstetrical problems.

They know conclusively where improvements can be made and if their recommendations are followed, better results are bound to come.

This volume should be read by every one practicing obstetrics.

WILLIAM C. MEAGHER

**Behind the Doctor** By Logan Clendenning, M.D. Octavo of 458 pp illus. N. Y., A. A. Knopf, 1933. Cloth, \$3.75.

Clendenning has already won fame with his "Human Body." His second attempt "The Care and Feeding of Adults" was for some unknown reason quite eclipsed by his initial undertaking in the lay field.

And now we are greeted with "Behind the Doctor." Clendenning is more imaginative in this work and lives successfully in different ages of medical history. Instead of confining himself to detailed reports he takes part in the enlightening conversations of these pioneers. The numerous illustrations in this book are in general more interesting than in his first book. One feels his enthusiasm in every page.

EMANUEL KRIMSKY

**International Clinics.** A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, etc. Vol. 4, 43rd Series 1933. Edited by Louis Hamman, M.D. Octavo of 317 pages. Philadelphia, J. B. Lippincott Company, 1933. Cloth, \$3.00.

In the first article, Wilder outlines the treatment of obesity used by him which is based upon the method previously described by Strang and his associates. The author, however, allows more carbohydrates—about 500 or 600 calories

in all; instead of the 360 allowed by Strang—and he uses yeast vitamin tablets instead of the actively growing yeast for vitamin B. He uses dibasic calcium phosphate to prevent mineral deficiency. For vitamins A and D, a concentrate of cod liver oil in tablet form has been used. Thyroid is used only on rare occasions.

Other articles deal with Acromegaly, Hypertension, and the Serum Treatment of Pneumonia. In the latter account Finland brings the subject up to date in all particulars. There is a section on the use of endocrine-gland products in the treatment of disease, among the writers being Campbell, Rowntree and Novak. There are also sections on Surgery, Clinical Pathology, and Dermatology.

It is an excellent number and a very useful book to have at hand.

W. E. McCOLLOM

**Colds and Hay Fever.** By Frank Coke, F.R.C.S. 12mo. of 148 pages. Baltimore, William Wood & Company, 1933. Cloth, \$2.00.

This small book deals with the various conditions in which sneezing is the most prominent symptom. It is written in an attempt to aid the practitioner in the differential diagnosis and treatment of these illnesses.

The author presents some of his own theories regarding the mechanism and treatment of these diseases. He admits that his theories are not based upon experimental evidence, but upon personal impressions, and that they need corroboration. The methods of treatment outlined are not entirely original, but are mostly applications of procedures introduced by others. His enthusiasm for certain forms of nonspecific therapy has not generally been shared by other workers. This book, however, makes interest-

ing reading concerning a symptom not commonly dealt with at such length in other works.

MATTHEW WALZER

**A Practical Medical Dictionary.** By Thomas Lathrop Stedman, M.D. Twelfth Edition. Octavo of 1256 pages, illustrated. Baltimore, William Wood & Company, 1933. Fabrikoid, \$7.50.

*Stedman's Medical Dictionary* is, in the opinion of this reviewer, the best. We have come across no blunders in this edition, either in spelling or in definition. The general arrangement is clear and convenient. It is used in our office in preference to the several other dictionaries remaining on our shelves.

FREDERIC DAMRAU

**Record-Librarian's Manual. A Guide to Organizing, Classifying and Filing Clinical Records and Medical Literature.** By Carl E. Black, M.D. Octavo of 154 pages. St. Paul, Minn., Bruce Publishing Company, 1933. Cloth, \$2.00.

This work presents a modified expansion of the Dewey Decimal classification with form divisions, using anatomy as the basis of classification. This system has been in use for twenty years and yet the author does not claim it to be the only worthwhile one.

The book is divided into three parts: Instructions to Record Librarians, Outline and Expansion of Dewey Classification, and Index to Classification. While all parts are necessary, the index will be especially useful when the rest of the book has been mastered.

A new book in a comparatively new field. The record librarian may easily adapt it to whatever system happens to be used in his or her hospital.

WESLEY DRAPER

## TO BE SUCCESSFUL

The following prescriptions for success appear in *The New England Journal of Medicine*. Are they correct? Perhaps some of our readers, out of their experience, can add other don'ts and do's, or criticize the ones now in the list. Here they are. What do you think of them.

### Family Physician:

Don't treat something you do not understand without expert advice.

Don't fail to be frank with your patients.

Don't fail to talk their language.

Don't fail to write out instructions.

Don't fail to consult the nurse on the case.

Don't talk shop to patients.

Don't tell patients how good you are.

Don't fail to have outside interests.

Don't have financial dealings with patients.

Don't keep moving from town to town. Select your location carefully and then stick.

Don't fail to show the spirit of service.

### Practice:

Firmness, fairness, and frankness with the patient, but do not show temper.

Accompany the patient to the specialist's when possible. A personal introduction goes a long way and the specialist would benefit greatly by the added conference with you while on the case.

Be neat and clean in your personal appearance.

Give more time to the convalescent stage of the disease.

Show cheerfulness and encouragement in your work.

Be fair to your professional rivals.

### Specialist:

Don't work alone. Find out who the family physician is when possible.

Don't fail to have close contact with the family physician.

Don't omit the written reports to the physician.

Don't disregard the patient's story.

Don't protect the family physician when gross negligence is evident.

Don't necessarily form conclusive opinion on single visit evidence.

Don't object to a second opinion in obscure cases.

Don't overcharge.

Don't fail to show the spirit of service.

Be considerate of patients and family's reactions to your opinions. Select your words with care.

During an extended examination observe carefully the patient's condition, lest a too fatiguing conference be held.

Don't send patients home from office operation on the elevated when they request a taxi.

**MEDICAL SOCIETY OF THE STATE OF NEW YORK**  
**ANNUAL REPORTS, 1933-1934****REPORT OF THE PRESIDENT**

*To the House of Delegates:*

Gentlemen:

It is needless for me to state that at the present time there are more changes occurring in our methods of practice, our relations to the public and its institutions than have arisen since the time this Society was founded. Medical economics are discussed in every group of physicians where more than two or three are gathered. Every Medical Society has its discussions. Every State and National Journal, representing organized groups, is publishing paper upon paper on the subject. Hospitals and dispensaries are accused of infringing upon the rights of the physician. Out-patient departments, it is claimed, are treating many individuals amply able to pay the physician. The hospital, as a corporation, is accused of practicing medicine—for example, the permitting of a department, such as the x-ray department, to treat outside private patients, make a diagnosis, charge a fee for such service and pay the physician on a salary basis thereby becoming an unfair competitor of the physician who, at considerable expense, has prepared and equipped himself for this service. Large medical centers with their great organizations are receiving considerable criticism from the profession. They, also, often disregard the ability of the patient to pay and accept many cases in free wards, who are amply able to pay, in order that they may fill their beds and carry needed "clinical material." This same criticism is made against the municipal hospitals in allowing the well-to-do free service and free hospitalization.

In the "new deal," which our present administration is endeavoring to put over, unfair competition in business, in trades

and in all activities of the public, is to be eliminated. The working of the Compensation Law has received its share of criticism in its discrimination. Lay organizations are believed to be interfering with certain functions of the practice of medicine in their efforts to socialize medical activities. The Health Departments are accused of practicing medicine. The State is accused of unfairness in its methods of handling the compensation care of the indigent. Wherever one goes, there is a spirit of unrest.

The Committee on Economics has been studying and investigating these and many other problems. Our Legislative Committee has been constantly on the alert to head off any legislative bills that would react unfavorably. Our Public Relations Committee is doing its share in solving these questions. The minority of the Committee on the High Cost of Medical Care rendered an excellent report which appears to have had a wholesome effect.

It is quite apparent we have made considerable progress this past year. Many clinics have taken measures to eliminate the individual, who is able to pay, from receiving free service. It may not be apparent in some sections but in many localities there has been definite improvement. The change, which Dr. Goldwater brought about in New York City whereby the city-owned hospitals can no longer care for compensation cases and receive for surgical services the fees which should go to the physician, is a bright spot on the horizon. Would that there were more Dr. Goldwaters in our profession with similar power for change.

It is the function of the State to protect the public. The Health Department is

called upon, where life and death are involved, to perform this function. In 1833 our Society went on record by petitioning the Legislature to establish a vaccine institute at Albany so that a pure vaccine might be furnished the profession for the prevention of smallpox. I take it this was the first effort of our Society to ask the State to give us a pure biological product for the prevention of disease. As a result of this early Act of the Legislature, the seed was sown which has grown into what, at the present time, is the Biological Division of the State Health Department with its vaccine serums and many other products which it furnishes to the physician gratuitously or at a nominal cost. This service from the State has enabled many physicians to save lives which otherwise would have been sacrificed.

At times the activities of the Health Department may appear to encroach upon the rights of the private physician. It is gratifying to note the policy of the health authorities to cooperate with and adjust the differences which necessarily must arise from their contacts with the profession.

The same group of the early members of our Society, who advocated a pure vaccine at the meeting of 1833, petitioned the Legislature to establish an institute located in the center of the State for the care of the insane. It was estimated at that time there were about 3000 indigent insane in the State. This was the beginning of our great system of institutions for the care of the mental case. This system has grown to the extent that the State paid \$23,000,000 for this one activity during the past fiscal year. The State and Counties have largely taken over the care of the tuberculous patient.

There are many medical activities which the State, in protecting the citizen, must perform. On the other hand, there are many functions which the family physician should be given the privilege of performing—examination of school children, the administration of toxin antitoxin, vaccination and many other like activities. The control of syphilis with its present highly technical treatment should be placed in the hands of those who are properly trained and equipped to care for such cases. The great number of uncured cases in every community with their serious sequelae, which become a burden on the public and add greatly to the census of our insane

institutions, is sufficient argument.

There is a definite effort by certain well-meaning laymen to establish socialized medicine in this country. We are familiar with what socialized medicine means to Russia and Germany. It would require another revolution in Germany to place the medical practice back on the high level it enjoyed before the present regime. It is argued by certain advocates that the practice of medicine is comparable to the profession of teaching. God forbid! The school teachers have suffered enough through this depression with thousands of them going unpaid in many diverse localities. In a recent Literary Digest it was stated that 200,000 teachers in the schools, which represent 25 per cent of all the teachers in the country, received \$750 or less per year. On this basis they received an average weekly income of \$15.00 per week which is less than the average CWA worker was receiving. In addition to this 85,000 teachers received less than \$500 per year or \$9.00 or less per week. This is what a socialized group of educated people are paid. Socialization of medicine may come. If it must occur, let it be such that it will elevate the practice of medicine and not lower our present standards. It is up to every member of our profession to take a definite stand on this question.

The Public Relations Committee has held conferences in various sections of the State this past year. I have had the pleasure of attending two such conferences. Their work in ironing out misunderstandings in at least two of our State Aid Hospitals deserves special mention. The work of this Committee has produced a feeling of harmony which is quite apparent in the various sections of the Medical Society of the State of New York.

The Committee on Economics in 1932-1933 evolved many excellent ideas whereby the Workmen's Compensation Law could be improved. They reported to the 1933 house of Delegates and suggested many changes in the Law. Governor Lehman in 1933 requested that a Committee be recommended to him which would study the present Compensation Law and make recommendations that would correct many of the abuses existing in the present Law. The Governor appointed five members from the Academy of Medicine of New York City and five from the Medical Society of the State of New York. These ten physicians have had many sessions and

devoted a great amount of study on the problem. Their report speaks for itself. If their recommendations are placed in the Law, the Compensation Law in the State of New York will be greatly improved and will be a model for other states.

The work of our Committee on Public Health and Medical Education cannot be appreciated unless one comes in contact with its working. It has been my privilege to attend some of the lectures. The high type of men our Chairman has been able to secure to give these lectures on practical subjects has been very gratifying. The enthusiasm of the men attending and the good attendance speak for themselves. As I have gone about the State this year, there appears to be a real demand for more of these courses.

The Legislative Committee has, as usual, rendered valuable service in heading off bills which were undesirable for the cause of scientific medicine and the welfare of our profession and the public. They have given their best efforts to promote desirable legislation. We owe a great debt to this Committee for what it has accomplished.

Our scientific program has been carefully arranged by the Chairman and his associates. Several new features are being introduced which bid fair to make our meeting one of the most interesting and scientific that you have ever attended. The new Chairman has given considerable time and study to his program. Let everyone, who attends the Utica meeting this year, make an extra effort not only to attend but take part in the discussion of the scientific program.

It is apparent, as I have visited various County and District Branch Societies, that organized medicine in New York State could be greatly improved if every County Society could be so organized that a meeting be held at least each month during the year excepting in June, July and August. This would stimulate more interest in the program and work of the Society. That every Society should appoint one or more of its members to serve on a County Committee which would represent the Public Health; one or more members who would serve on the Scientific Program; one or more members to represent Public Relations; one or more members to represent Legislative activities and one or more to study the Economic situation. These are the five Standing Committees which con-

sider the plans and policies of the State Society. If each County Society would do this, a different spirit would exist with more interest in the activities of the state organization.

Our Executive Officer has innumerable duties to perform. It is impossible for him to attend all the committee meetings, special and standing, attend the District Branch meetings, attend to the active legislative work which arises each year and visit all the County Societies. It has been my privilege this past year to observe all the demands that are made on him in his service to the State Society. It occurs to me that a field secretary might be appointed who would contact and visit the County Societies and point out to them how they can improve their organizations so that they could be an active part of the Medical Society of the State of New York.

There is a feeling among certain County Societies that our dues are a burden. I must again call your attention to the fact that, whatever the County Society dues may be, the State Society receives \$10.00 from each member. The \$10.00 you pay gives a directory to each member in the state with enough information concerning each member to enable you to know where and when he was graduated, his special work and his hospital connections. You receive a Journal twice each month which, if you take the time to read it, is worth its cost. It keeps you in touch with the various activities of the State Society. Every member in good standing has legal protection and counsel by a high grade attorney in case you are sued for malpractice. This service alone is worth what is paid. It does not furnish indemnity in case of a verdict. Those, who desire to protect themselves in case of a verdict, must insure in our designated insurance company.

I wish to take this opportunity to acknowledge the services of Secretary, Dr. Daniel S. Dougherty, who keeps the machinery of our Society oiled and running smoothly and to Dr. Peter Irving, our Assistant Secretary, to whom we are greatly indebted for looking after the affairs during the illness of our Secretary; also, the aid which Miss Baldwin, with her long experience in the affairs of the Medical Society of the State of New York, has rendered me during my term as President.

Respectfully submitted,

FREDERICK H. FLAHERTY, *President.*

April 1, 1934.

## REPORT OF THE SECRETARY

*To the House of Delegates:*

Gentlemen:

Your Secretary has the honor of submitting his ninth annual report.

## THE SOCIETY

It gives him pleasure to report a steady progress and growth in membership and in activities.

As usual the report is administrative rather than clerical. But one event of any great importance is to be recorded, the change in the publication and management of the JOURNAL, a detailed report of which will be given under the appropriate heading.

## THE SOCIETY'S OFFICES

For the first time in ten years a change has to be recorded. Through the giving up of the JOURNAL offices the Executive Editor, the Advertising Manager and the two stenographers necessarily lost their connection with the Society.

The Secretary is pleased to record, however, that Dr. Overton is now Editor of the *New Jersey State Journal* and the contract of Mr. Tufts has been taken over by the new business management.

The personnel of the Secretary's office is constituted of the same willing and efficient staff that it has been for several years past. This includes, of course, Miss Baldwin, the Office Manager without whose intelligent grasp of the Society's affairs both past and present, your Secretary would feel a severe loss. Mrs. Roetger, the Assistant Manager, and Miss Briggs in the Legislative office at Albany, deserve more than passing notice.

## FINANCIAL DEPARTMENT

A study of the statements of the Board of Trustees and of the Treasurer shows that despite the depression the Society has suffered but little. An astonishing fact is that many county societies have raised their dues, showing a realization of the importance to them of organized medicine.

The personal worth of our Trustees has been proven by the action of the House of Delegates of the American Medical Association in electing Dr. Arthur Booth a trustee of that body and Dr. N. D. Van

Etten Vice-Speaker of its House of Delegates.

## LEGAL DEPARTMENT

Under the able guidance of Mr. Lorenz J. Brosnan as Counsel and Mr. T. H. Clearwater as Attorney, the legal affairs of the Society in regard to the malpractice defense of its members as well as the advice requested by officers and committees has been well taken care of.

Attention is called to the following resolution adopted several years ago which has at times been a matter of disturbance to your counsel and secretary:

"All questions or requests for information by committees or county societies or individuals must be referred, therefore, through the Secretary's office to the Executive Committee with which Counsel sits."

When your Secretary introduced this resolution it was not realized that there were times when two or three months might elapse between the receipt of the request and the meeting of the Executive Committee. He therefore recommends with the concurrence of Counsel that all such questions or requests that might be in the emergent class be taken up by Counsel with the Secretary.

The Secretary acknowledges with thanks the many acts of kindness and the valuable advice given in conducting his correspondence.

## RETIRED MEMBERSHIP

Your Secretary feels that an injustice is being done to this class of members, many of whom are still practicing and therefore liable to malpractice suits.

He recommends that the right to malpractice defense and the privilege of insurance be granted to them.

## COMMITTEES

The work of the committees, both standing and special, has been performed cheerfully and willingly and the Secretary feels that he can voice the appreciation of the Society in the excellence of the work and the loyalty shown to the ideals of the Society and the profession by the members.

He extends his personal thanks to the Chairmen of the standing committees who have recognized his membership in them by extending invitations to their meetings.



It is with no intention of putting a greater burden on them but because of this loyalty and experience that the Secretary recommends the elimination as far as possible of all special committees, the work to be done by the permanent committees. By doing this the affairs of the Society can be handled more expeditiously and smoothly.

#### DISTRICT MEETINGS AND CONFERENCES

It is gratifying to note that the attendance at the District Branch Meetings has continued to be large and the high standard of the scientific programs has not been lowered.

The conferences of the County Secretaries and the County Legislative Chairmen were well attended and productive of much good being well worth the slight expense entailed.

#### LEGISLATION

Matters of this character will be handled by the report of the Legislative Committee. The Secretary has, however, one recommendation to make. Of late a rather harmful procedure has crept into our legislative work, not through any fault of the Committee or the Executive Officer, but through the over zealous enthusiasm of some of our members who think that by rushing resolutions through the House of Delegates or pressing matters in their county societies they will hasten action, not realizing that six to eight months elapse between the annual meeting and the meeting of the State Legislature and what is a fact today is often by tomorrow a dream of the past. Your Secretary has had years

of experience in these legislative matters and he sincerely recommends that all resolutions affecting legislation should be automatically referred to the Committee on Legislation.

The Secretary expresses his thanks to Dr Peter Irving, Assistant Secretary, and Dr Joseph S Lawrence Executive Officer, for the assistance and efficient cooperation which they have extended him throughout the year.

#### MEMBERSHIP STATISTICS

Membership December 31, 1932	12 653	
New Members, 1933	604	
Reinstated Members 1933	321	
		13,578
Deaths	176	
Resignations	98	
Expelled	2	
Membership automatically ceased through rescinded license	1	
		277
		13 301
*Dropped for nonpayment of dues December 31 1933		723
		12,578
Elected after October 1, 1933, and dues credited to 1934		270
		12,848

It is a pleasure to be able to report that there are less delinquents than last year and one third of the Counties are Honor Counties, by far the largest number ever recorded. Allegany, Chango, Columbia, Cortland, Essex, Fulton, Greene, Lewis, Montgomery, St Lawrence, Schoharie, Schuyler, Seneca, Sullivan, Tioga, Tompkins, Warren, Wyoming and Yates.

DANIEL S DOUGHERTY, *Secretary*

April 1, 1934

\* The delinquents are paying daily. In fact over 150 have paid since writing this report making those dropped for nonpayment of dues much less than last year.

#### REPORT OF THE COUNCIL

To the House of Delegates  
Gentlemen

The Council has the honor of presenting the Annual Report which includes those of the Executive Committee, Committee on Publication, Committee on Insurance, and Journal Management Committee.

Two regular meetings have been held, April 4, 1933, and December 14, 1933, both in New York City.

Pursuant to the provisions of the By-Laws governing the constitution of the Executive Committee the following members of the Council, nominated by the

President, were elected to serve with the Officers as the Executive Committee for the ensuing year. Thomas P Farmer, Samuel J Kopetzky, James M Flynn, Stuart B Blakely and Louis A Van Kleeck.

The appointment of Standing and Special Committees was referred to the Executive Committee.

It was decided that the 1934 House of Delegates convene at 10 00 A M instead of as formerly in the afternoon.

The President was empowered to designate representatives from the Medical So-

ciety of the State of New York to meet with representatives from the New York Academy of Medicine, Department of Hospitals and the United Hospital Fund with the view of investigating the matter of Dispensary abuse and formulating recommendations which would be equitable both to the Medical Profession and the Hospitals; the number of representatives to be determined by such agreement as the President of the New York Academy of Medicine and the President of the Medical Society of the State of New York may decide upon.

The Council placed itself on record as not approving of the fee schedule that had been promulgated in relation to operations on crippled children unless it has been approved by the House of Delegates.

The resignation of Dr. Orrin Sage Wightman as Editor-in-Chief of the JOURNAL was accepted with regret.

Dr. George R. Critchlow of Buffalo and Dr. William A. Krieger of Poughkeepsie were nominated to fill the vacancy on the Nurses' Advisory Council appointed by the Regents.

#### EXECUTIVE COMMITTEE

The Executive Committee has held regular meetings on the second Thursday of each month with the exception of July and August. At the first of these meetings it organized by electing Frederick H. Flaherty, Chairman, and Samuel J. Kopetzky, Vice-Chairman. At the same meeting Orrin Sage Wightman was appointed Editor-in-Chief; Frank Overton, Executive Editor; Lorenz J. Brosnan, Counsel, and Thomas H. Clearwater, Attorney.

Although the work of the Executive Committee is of necessity more or less routine, it is extremely important as there are many important problems brought to it to solve, all of which have had the most careful consideration by the Committee.

In accordance with the By-Laws the Annual Budget was prepared and referred to the Trustees for the necessary appropriation.

The renewal of the contract with the Executive Officer was approved and referred to the Trustees.

On nomination by the President the following were elected members of Standing Committees:

*Scientific Work:* William F. Jacobs.

*Public Health and Medical Education:* George W. Kosmak, Mahlon H. Atkinson,

Leo F. Schiff, Martin B. Tinker, Edward G. Whipple, Clayton W. Greene and Nellis B. Foster. Russell L. Cecil was later appointed a member of the Committee to fill the vacancy left through the death of Dr. Foster.

*Legislation:* John J. Buettner, Bernard B. Berkowitz, B. Wallace Hamilton and Edward E. Haley.

*Arrangements:* Andrew Sloan, Chairman, Edward E. Powers, Dan Mellen, George M. Fisher, Thomas H. Farrell, F. M. Miller, William Hale, Jr., Bion P. Allen and William B. Roemer.

*Economics:* Charles H. Goodrich, Joseph P. Garen, Frederick M. Miller, George C. Vogt, Joseph C. O'Gorman, Cassius H. Watson, Terry M. Townsend, Frederick S. Wetherell and Edward T. Wentworth.

*Public Relations:* William H. Ross, George M. Fisher, Oliver W. H. Mitchell, Augustus J. Hambrook, William D. Johnson and Thomas H. Cunningham.

The following Special Committees were appointed by the President:

*Medical Research:* John J. Morton, Jr., Chairman, John Wyckoff, G. Canby Robinson, Augustus B. Wadsworth, Edwin MacD. Stanton, Herman G. Weiskotten, Joshua E. Sweet, Allen O. Whipple, Marshall Clinton, Winfield W. Scott, Burton T. Simpson, Frank A. Hartman, Simon Flexner and Peyton Rous.

*Insurance Committee:* Frederic E. Sondern, Chairman, Chas. Gordon Heyd and Louis A. Van Kleeck.

*Prize Essays:* James Ewing, Chairman, Allen O. Whipple and Leon H. Cornwall.

*Publication:* Frederic E. Sondern, Chairman, Peter Irving and Louis A. Van Kleeck.

*To Study the Field of Preventive Medicine:* William H. Park, Chairman, Edwin MacD. Stanton, Morris Maslon, Russell G. Nelson and Alfred E. Shipley.

*To Study the State Control of Certified Milk:* Alec N. Thomson, Chairman, Edward J. Wynkoop, Charles Hendee Smith, Paul Brooks, Douglas P. Arnold and Walter Lester Carr.

*To Prepare a History of Medicine in the State of New York:* Nathan B. Van Etten, Chairman, Alvah S. Miller and William H. Ross.

*To Consult with the Saratoga Springs Commission:* John Wyckoff, Chairman,

George Scott Towne and L. Whittington Gorham.

*Temporary Emergency Relief:* James N. Vander Veer, Chairman, Hyzer W. Jones and Albert G. Swift.

James N. Vander Veer was reappointed *Liaison Officer* to act with the State Department of Health in the Control of Venereal Diseases.

*To Study the Entire Question of Publication of the Journal and Report back to the Council:* Arthur W. Booth, Chairman, Floyd S. Winslow, Edward E. Haley, George W. Kosmak and Peter Irving.

*Sub-Committee of the Committee on Public Health and Medical Education, to Study the Question of Children in Schools for the Deaf throughout the State:* Wendell C. Phillips, Chairman, Augustus J. Hambrook and Mahlon H. Atkinson.

Terry M. Townsend was appointed *Chairman* and Thomas F. Laurie, *Secretary*, of the newly created Section on Urology.

The resignation of James Ewing as Chairman of the Committee on Prize Essays was accepted and Albert C. Snell appointed to fill the vacancy.

The principles in the Report of the Governor's Committee on Workmen's Compensation were approved.

The Rules and Regulations Governing Malpractice Defense as adopted by the House of Delegates were sent to every member of the Society in accordance with instructions received.

The Secretary was empowered to inform the Orange and Dutchess-Putnam County Medical Societies that the State Society had no objection to any form of arbitration which they may desire, but that the arbitration must not be held in New York City.

It was recommended that the House of Delegates grant the Permanent Retired Members the privilege of Malpractice Defense.

Moses Keschner, Chas. Gordon Heyd and Nathan B. Van Etten were nominated to fill the vacancy on the Grievance Committee created through the expired term of Dr. Keschner on December 31, 1933.

The Committee placed itself on record as being of the opinion that the case method is by far the best way of providing medical care under the Civil Works Administration.

A letter was sent to Dr. Goldwater, Commissioner of Hospitals, expressing the ap-

preciation of the Society of his action barring from the wards of the City Hospitals all compensation cases that were not emergency ones.

The aims and purposes of the Society for the Prevention of Asphyxial Deaths were approved and the House of Delegates requested to instruct the Delegates to the American Medical Association to sponsor a similar resolution in the House of Delegates of the National Organization.

Arthur W. Booth was appointed Chairman, Chas. Gordon Heyd, Samuel J. Kopetzky, Frederic E. Sondern and James F. Rooney, members of a Committee on Trends in Medical Practice with Special Reference to Socialized Medicine and the best way of combatting it; the recommendations of the Committee to be presented to the House of Delegates, through the Report of the Council. Vide Auxiliary Report.

The following resolution was approved:

That inasmuch as the duties of the Standing Committees of the Medical Society of the State of New York cover all the ordinary and foreseen activities and interests of the Society, that the Speaker of the House of Delegates, the Executive Committee and all those in authority be asked to endeavor to eliminate in most instances the authorization of Special Committees of the House of Delegates, believing that the proper reference for new matters should be to a Standing Committee of the Society authorized by the By-Laws for such purpose.

#### COMMITTEE ON INSURANCE

Present-day economic conditions have probably been the cause of many unusual problems which have had the best attention of your Committee and have been duly reported to the Executive Committee.

It is noted with regret that probably for the same reason there has been an approximate 10% decrease of participants in the Group Plan. To ameliorate this condition our Indemnity Representative instituted partial payments of premium during the year and used such other means in his power to relieve the situation. In these ways he accomplished the re-establishment of the policies in 50% of the cases.

The codifying of the rules applying to indemnity insurance adopted by the last House of Delegates has been well received

and has materially simplified the administration.

### THE JOURNAL

Pursuant to the resolution adopted by the House of Delegates on April 3, 1933, a Special Committee was appointed

"To study the entire question of the JOURNAL, with a viewpoint of submitting recommendations as to organization, form of JOURNAL, finance, and possible profit-making administration and report back to the Executive Committee not later than September 15, 1933."

An exhaustive study was made by a Committee under the Chairmanship of Arthur W. Booth. The other members being Floyd S. Winslow, George W. Kosmak, Peter Irving and Edward E. Haley. The Executive Committee became convinced that, while financial profit from operation is not to be expected at this time, a substantial reduction in cost of publication to the Society could certainly be effected.

To accomplish this end the Executive Committee found it necessary and wise to completely change the arrangements for publication after the appearance of the December 15, 1933, issue of Volume 33. The special office that had been maintained was discontinued. The Society then entered into contractual agreement with Mr. Thomas R. Gardiner, whereby, for a definite yearly sum, Mr. Gardiner assumed all business and financial conduct with the usual editorial assistance of publication. The terms are financially very advantageous to the Society. The duration of the contract is two years.

The agreement provides for complete control by the Society of all content, both reading matter and advertisements. For this purpose a Journal Management Committee was created consisting of Arthur J. Bedell, Chas. Gordon Heyd, Peter Irving, George W. Kosmak and Frederic E. Sondern.

This new Committee was given specific instructions for its guidance. Advertisements are to be accepted only if they conform to the Rules and Regulations of the Council on Pharmacy and Chemistry of the American Medical Association. Original articles, in order that they represent the formal scientific activities of the Society, are to be accepted, at present, from those papers which have been actually presented before the Annual Meeting, a District Branch Meeting or one of the Meetings of the sixty County Societies in the

State. Other articles of state-wide interest, such as may proceed from the State Department of Health may be considered eligible. It was felt that this policy of selection would ensure to authors who had gone to the trouble of reading their papers the priority of consideration which their effort deserves, and would avoid unnecessary delays in appearance.

Under date of April 12, 1934, the following formal report was presented to the Executive Committee by Frederic E. Sondern, Chairman of the Journal Management Committee:

"The Journal Management Committee begs to report that, beginning with the issue of January 1, 1934, it has exercised active supervision of publication in accordance with policies laid down by the Executive Committee.

"The JOURNAL has appeared in new size and new format. The editorials have been expanded. Unacceptable advertisements have been expunged. Original articles that did not fit in the category of official presentation have been rejected.

"The double task of keeping down cost and at the same time producing a journal of proper content has been in some ways embarrassing to the Committee. The early issues were not to the satisfaction of the Committee in size of type or general printing workmanship. Changes were required, and have been made as fast as was consistent with issuance of a semi-monthly JOURNAL, in the effort to bring the magazine more nearly up to the ideals of the Committee.

"Criticisms have been invited and gratefully received. They have been very helpful. Further comment will be particularly welcome. It is hoped that, before long, additions in the advertising section may provide an increase in the number of pages devoted to reading matter."

### COMMITTEE ON PUBLICATION

Since the appointment of a Journal Management Committee, the sole remaining duty of your Publication Committee has been supervising the publication of the Directory. This has been done in the usual way this year at a cost of the allocated one dollar per year per member and the additional sum of \$696.74. Current conditions in advertising and sales explain the decrease in revenue.

Your Committee is of the opinion that with the improvement of business condi-

tions generally, a plan of publication can be proposed which will make the Directory cost the Society less and produce a more substantial volume.

The matter of certification of specialists by National Boards is the result of an insistent and proper demand, and your Com-

mittee believes that evidence of such certification should be attached to the names of all members thus accredited.

Respectfully submitted,

DANIEL S. DOUGHERTY, *Secretary*

April 1, 1934.

## REPORT OF COMMITTEE ON SCIENTIFIC WORK

*To the House of Delegates:*

Gentlemen:

The interest and efficiency of the Chairmen of the various sections has made it possible for the Committee on Scientific Work to determine its policies well in advance and to offer a program of high character for the 1934 meeting at Utica.

Under the direction of Dr. Jacobs a scientific exhibit unusually well coordinated with the scientific program has been arranged. The exhibits are novel, diversified, of excellent character, many of them demonstrations of well planned research and illustrative of papers to be presented at the general sessions and section meetings.

While there is no single building in Utica which would comfortably house all the sections and all the meetings, it is extremely fortunate and most assuring to find that the Committee on Arrangements, using the two principal hotels and the Westminster Church House, are able to furnish within a radius of two city blocks ample, commodious and well-arranged meeting places for all.

The scientific program we believe to be something more than interesting and instructive. It combines a considerable number of presentations of high scientific character based on careful research offered by the original workers, and thoroughly practical discussions of diagnosis and treatment by men well known for their clinical training and experience.

For the general session Tuesday afternoon there will be a symposium on Growth and Reproduction, a review of the recent extensive research discoveries concerning the pituitary and prepituitary hormonal functions. It will be pointed out that the clinical applications must follow cautiously for it is to be expected that in advances so rapid seeming contradictions must arise needing clarification if not further study. We believe the particular strength of this symposium resides in the fact that the

essayists individually are leaders in laboratory and clinical research in their respective fields.

For the Wednesday afternoon general session the subject of Forensic Medicine is to be discussed by a group of men who are earnestly endeavoring to advance this important branch of medicine as a specialty and by an experienced criminologist and psychiatrist. The establishment of the exact cause of death and mode of death is of enormous value in the progress of medicine, and for the accumulation of statistics as a basis for health policies. An understanding of criminal personalities, the implications of criminal knowledge or intent, the detection of crime, the modes of violence in their medical relations, are subjects of vast importance to society and to the due processes of law in the apprehension and prosecution of malefactors. This symposium will bring forth much new information and novelty of procedure and approach and is to be accompanied by a scientific exhibit which is illustrative and unique.

The Medical Section has a number of eminently practical papers covering everyday medical problems such as colon function, anemia, arthritis, diagnosis, and the value of newer diagnostic methods and means of approach, coupled with two papers in the broader fields of symptomatology and interrelation of the specialties.

The Section on Surgery has for Tuesday a symposium on the treatment of certain heart conditions by total thyroidec-tomy from both the medical and surgical aspects, the presentation being by original workers in that field; and for Wednesday a symposium on peptic ulcer which covers the natural history, statistical review of cases, and discussion of types of treatment.

The Obstetric and Gynecology Section papers show the tendency for these specialties more and more to make use of

the fundamental facts of metabolism, bacteriology and pathology.

The Section on Neurology and Psychiatry groups papers which cover the neuropsychiatric sequelae of various traumatic and birth injuries, the practical diagnostic and therapeutic considerations of infections of the cerebrospinal tissues and coverings, the anomalies of vascular origin, the results of tumor obstructions, and the backgrounds for various vegetative disorders and psychic states.

The Section on Pediatrics shows a series of papers accompanied by carefully planned and individually executed demonstrations. There will be explanation and discussion of some of the newer methods of intravenous and forced perivascular modes of treatment, two papers involving cutaneous allergic reactions of recent discovery and three papers dealing with the problem of diseases of the new born.

The Section on Dermatology and Syphilology has a group of papers of practical character which will be rapidly presented in accordance with the methods of this specialty and thoroughly discussed. It will have as an invited guest a distinguished dermatologist and author. A number of exhibits and demonstrations have been arranged.

The Section on Ophthalmology and Otolaryngology has the innovation of an instruction hour preceding the regular session. This plan is worthy of consideration by other sections. There will be at least two scientific exhibits of original work in these specialties.

The Section on Public Health devotes itself on Tuesday to a series of practical papers upon a wide range of topics and on Wednesday to a most important symposium on Asphxia arranged by Paluel J. Flagg, M.D., President of the Society for the Prevention of Asphyxial Death. The speakers are of national renown and there will be an extensive scientific exhibit demonstrating how some fifteen thousand deaths annually in the United States might be prevented.

The new Section on Urology has the interesting and valuable arrangement of devoting one day to a symposium on the treatment of gonorrhea and the second day to one on obstructive uropathy, and the new Section on Radiology to various modes of treatment for different types of cancer on Tuesday and to newer diagnostic methods on Wednesday.

Dr. Richard Kovacs of New York has again arranged an interesting session on Physical Therapy for Wednesday morning covering the physical therapy in hospitals, in general practice and in health resorts and for industrial injuries.

We thank Dr. Charles Norris for his invaluable assistance in arranging the symposium on Forensic Medicine, and Dr. Robert T. Frank for his advice and personal efforts in the formulation of the Tuesday afternoon program.

Respectfully submitted,

WILLIAM A. GROAT, *Chairman.*

April 1, 1934

## REPORT OF COMMITTEE ON LEGISLATION

*To the House of Delegates:*

Gentlemen:

Your Committee on Legislation is again obliged to submit its report before the close of the legislative season. However, probably before you convene the Legislature will have adjourned, in which event this report will be completed by a supplementary statement.

The Committee has been very busy this year. Conferences have been held with representatives of several organizations regarding proposed legislative matters. Particularly among these is a conference that was held with the Legislative Committee of the State Hospital Association re-

garding the drafting of a hospital lien bill.

The chairman has regularly sat in conference with the chairmen of the other standing committees when invited to do so by President Flaherty. These conferences have been held monthly and have proven of considerable value. They have afforded us an opportunity of discussing matters that committees have thought had a legislative significance.

We used the usual methods of stimulating the County Society Chairmen to make contact with their legislators and to arouse interest in prominent local individuals in proposed legislation which has a bearing upon public health regulations or the practice of medicine.

Early in the session we called together the chairmen of the County Society Legislative Committees for a conference in Albany. Twenty-five counties were represented. The Executive Officer supplied all those present with copies of bills which were then before the Legislature and we reviewed them, discussing the particular features in each proposed amendment and recording our approval or disapproval, with instructions to the Executive Officer to represent us before the appropriate legislative committees.

We have had an unusually large number of bills to care for this year. At present, of the thirty six hundred bills before the Legislature, one hundred and eighty have some relation to public health, the practice of medicine, or the activities of physicians. Among these are many with such little merit that one wonders why they were introduced. Nevertheless, we have studied them all very carefully as they have been introduced and sent copies of the important ones to the chairmen of the county committees, calling attention to the objective of the amendment and asking for comment. We have also advertised the name and number of all bills in the weekly bulletins that we have issued. These bulletins go to the chairmen of all the County Society committees and also to members of the Council and representatives of local medical organizations who have requested to be kept informed. Our bulletin service has been very helpful. On special occasions, as, for instance, when our hospital lien bill was being considered in committees, we asked through the bulletin that communications be sent to members of the committees and later, at the conferences where the Executive Officer appeared representing us, it was apparent that the members of the committees had received requests from their constituency to give the bills special consideration. In our experience, the letters written by physicians or prominent lay persons to their legislators, are more influential than debates at public hearings.

Again it is very gratifying to report that our representative, Dr. Lawrence, is being very courteously received by the members of the committees in the Legislature. He is frequently called to their conferences to explain the medical or public health aspect of bills and consulted by legislators sometimes at the request of their county chairmen.

In developing support for the hospital lien bill, we addressed a request to all of the general hospitals in the state for a statement of the amount of money they lost in either June or July of 1933 that they might not have lost had the proposed amendment been a part of the law at that time. The hospitals responded very promptly and at the same time sent copies of their letters to their legislators. The statements they sent afforded us material for a powerful argument. We are also very grateful for the direct support they gave through their communications.

At your request, we have had a bill drafted and introduced amending the Education Law so as to prevent any but physicians from giving anesthetics. The bill has been very widely opposed. Hospital organizations, individual hospitals and surgeons have written resolutions and statements of their opposition to your committee and to the introducer of the bill and the committee to which it was referred.

We also endeavored to draft a bill in accordance with your instructions proposing an amendment to the General Municipal Law. We offered the proposal to the legislators, but were unable to get anyone interested enough to take the bill, particularly because it was learned that the State Department of Social Welfare would not support the amendments.

Your committee would like to suggest that when the House of Delegates has legislation to propose, it submit the proposition to the Committee on Legislation with instructions to act in accordance with its best judgment. This suggestion is made because of the conflict which has arisen this year. We solicited and secured the hearty cooperation of the hospitals in supporting our lien bill, but aroused their opposition by our nurse anesthetist bill. It is unfortunate that two such amendments should be attempted at the same time.

We distributed, through our bulletin, comments on the report submitted by the committee appointed by the Governor to make a study of the Workmen's Compensation Law, and later sent a copy of the bill that was drafted on the basis of the report. At the time of writing this we are soliciting state wide interest in the advancement of the bill. Sufficient time has not elapsed since it was printed to ascertain what opposition it may arouse. We shall have more to say about this in our supplementary statement.

The osteopaths have introduced their bill of last year and then submitted two others, modifications of the first. All of these ask the privilege of prescribing drugs and performing certain forms of surgery. We have offered the objections that we made in previous years.

The usual antivivisection bill appeared and had its hearing. The Committee on Medical Research effectively opposed the bill.

An antivaccination bill has been introduced. We are using our influence to have it killed in committee.

The chiropractors have not as yet introduced a bill, but they have circulated briefs and proposed amendments to the law in their favor. They sought and were granted an opportunity to discuss their proposals with the Regents. To this conference the President of the Society, the Legislative Committee and the Executive Officer were invited and requested to discuss the re-

quests of the chiropractors. Since that conference we have learned that the Regents refused to support the proposed amendments.

We have had no outright state insurance bills, but certain of the objectionable occupational disease bills have recurred. Nevertheless, the bills that would affect physicians in their practice are increasing in number and are requiring more and more study and effort on the part of your committee.

We are very grateful to the chairmen of the county committees, to representatives of other organizations and to other members of our bulletin list for the aid they have rendered us in bringing our point of view to the legislators.

Respectfully submitted,

HARRY ARANOW, *Chairman*

April 1, 1934

## REPORT OF COMMITTEE ON PUBLIC HEALTH AND MEDICAL EDUCATION

### *To the House of Delegates:*

Gentlemen:

Your Committee on Public Health and Medical Education begs leave to submit the following report for the current year.

This report has been made brief in the hope that a large number of members of the Society will read it and discuss with their delegates the subjects which are herewith presented. The report follows the form of previous reports from this Committee. The relative position of the various subjects does not indicate their importance.

### GRADUATE EDUCATION

The following table is a report of the graduate courses to be sponsored by the State Society for county medical societies under the direction of this Committee for the current year.

*Bronx County.....	Physical Therapy
Cayuga County.....	Subject not decided
Chemung County....	Neurology
Chenango County...	Internal Medicine
*Columbia County...	Dermatology & Syphilology
*Cortland County...	Clinical Conference
Cortland County....	Internal Medicine
Herkimer County...	Traumatic Surgery
Jefferson County....	Infections
*Madison County....	Heart Disease
*Monroe County....	Infections
Montgomery County.	Traumatic Surgery
*Niagara County.....	Physical Therapy

*Onondaga County...	Dermatology & Syphilology
Orange County.....	Pediatrics
Otsego County.....	Traumatic Surgery
*Rockland County...	Internal Medicine
St. Lawrence County.	Infections
Schoharie County...	Traumatic Surgery
Steuben County.....	Neurology
Sullivan County....	Internal Medicine
Tioga County.....	Internal Medicine
*Tompkins County...	Clinical Conference.

(Cortland County is having a course in the spring of 1934 and joined with Tompkins County for a clinical conference last fall.)

This table is necessarily incomplete at the time of the writing of this report. An asterisk before the county indicates that the course has been completed. As it is necessary to submit this report several weeks in advance of the meeting of the House of Delegates and as many of the courses will not be completed until after the time of that meeting, it is impossible to submit at this time a summary of the year's work. The Committee has continued its practice of keeping detailed records of all courses and hopes to publish later as a separate article a comparative summary for the different years.

The subject of the continual education of the physician has been thoroughly discussed in our previous reports. The need for this instruction is universally recog-



nized Furthermore, plans for offering this instruction are in effect in many state medical societies It is gratifying to report that the amount of this work in the various county societies of this State continues unabated During the present year another county has held a course for the first time since the State Society has solely sponsored this work Fifteen county medical societies which had courses last year are having courses this year Four societies, Chemung, Jefferson, St Lawrence, and Sullivan, have the distinction of having had a course each year since the responsibility of this work was assumed by the State Society This is a record of which these county societies may be very proud Several other counties have a record approaching this and have done excellent work As has been emphasized before, the real success of this work depends upon the efforts of the officers and committees of the county societies In one or two instances the co-operation which the State Committee has received from the local officers has been disappointing

A clinical conference, which was arranged for a joint session of Cortland and Tompkins counties, was most successful In its last annual report this form of instruction was discussed in detail The Committee again wishes to direct attention to the advantages of the clinical conference and hopes that more county societies will avail themselves of this plan In connection with the didactic lectures, county societies should also take advantage of the opportunity to receive practical instruction in the examination and treatment of local patients presenting difficult problems

The Committee is glad to report that some county societies are sponsoring their own programs of graduate education In addition to the work in New York and Kings counties, an excellent program has been formulated in Queens County and Monroe County has started a splendid program this year In the work sponsored by the State Committee the policy has been to make the lectures instructive and to correlate the topics so that the attention of the classes is concentrated on a more or less definite subject The Committee is endeavoring each year to make its plan more comprehensive Such progress necessarily must be slow

The Chairman of the Committee gave a report on the work in graduate education of this Society before the Annual Confer-

ence of Secretaries of Constituent State Medical Associations held in Chicago on September 22, 1933, under the auspices of the American Medical Association This report was published as an article in the December *Bulletin* of the American Medical Association The Committee is in correspondence with similar committees of other State Societies Much has been gained by the interchange of information between these similar bodies of different State Societies

#### GENERAL PUBLIC HEALTH ACTIVITIES

Your Committee has no further report to make regarding the maternal mortality study which was attempted by the State Department of Health two years ago No information has been sent to the Committee for review

The Committee has no further report to make regarding tuberculosis reporting The Committee is continuing to cooperate with the State Department of Health in improving this work

The Committee has aided in arranging programs dealing with cancer for several county societies

The Committee is glad to report that as a result of the joint efforts of the State Department of Education, the Public Relations Committee and this Committee there has been an increased tendency, especially in one large city, to have the medical examination of school children made by private physicians

The Committee has no particular matters to report regarding periodic health examinations or physical therapy

Through joint action between the Public Relations Committee and this Committee a subcommittee has been appointed to make a special study of the deaf and hard of hearing children of this State This subcommittee consists of Dr Wendell C Phillips, Chairman, Dr Hambrook, and Dr Atkinson It is the purpose of this subcommittee to work for the conservation of hearing of children with potential loss of hearing through early and adequate otological care and to see that children with permanent loss of hearing shall receive adequate medical and educational care This subcommittee will make its own report to the House of Delegates

The Committee has offered its services to Mr Frederick Daniels, Director of the State Temporary Emergency Relief Association and Commissioner Parran of the

State Department of Health in a study of the nutritional status among children in families on relief rolls. The Committee recommended that these studies be made under the direction of the local county medical societies.

The Committee has made a special attempt to provide postgraduate instruction on orthopedic subjects with the hope that physicians might be able to take care of many cases which are now being directed by state orthopedic service.

The Committee is studying the importance of arthritis as a public health problem. A recent survey has shown that chronic arthritis and chronic rheumatism, not including rheumatic heart disease, constitute by far the largest group of patients with chronic disease. Chronic arthritis cripples in the largest number of cases and kills in the smallest number. This ability to cripple without killing would seem to put this disease in the lead of all other chronic diseases as a preeminent social, economic and medical importance. A more definite report on this subject will be submitted later.

#### THE INDIVIDUAL PHYSICIAN AND PREVENTIVE MEDICINE

It is the opinion of the Committee that there is no reason why the physician should not participate to a greater extent in the actual performance of work in preventive medicine such as now forms a large part of the activity of health departments. On the other hand, there are many reasons why he should do so. Apparently the present condition of affairs exists principally because of the lack of some well-organized and definite plan. Conferences, committee deliberations, surveys and studies do not seem promising as affecting a change in the present procedure.

Preliminary to the consideration of such a plan it would seem wise to review certain facts which warrant suggesting this change. Official health work in most instances has had its inception in the work of physicians who always have and always will be interested in the welfare of the public. The success of any public health activity demands the cooperation of the medical profession which at all times has been ready to cooperate in an honest and efficient way. Unfortunately, too often cooperation has only meant the approval of the health department's plans with very little opportunity for the medical profession to par-

take in the planning or the execution of the particular activity. Lack of harmony, disagreement and dissatisfaction has followed as a natural sequence. Remarkable results which have been achieved in the reduction of disease and the prolongation of life are too well known to repeat. Too often the impression has been created, though not always intentionally, that these benefits have resulted from the work of the official and nonofficial health agencies. It has been forgotten that the general mortality rates have been considerably reduced by improvements in curative medicine. The largest reduction in preventable diseases have been due to sanitary engineering and bacterial immunization. At the present time at least 80 per cent of all illness is due to causes which require the care of the individual while less than 20 per cent is due to causes which can be controlled by governmental activity. It therefore might be inferred that individual hygiene is four times more important than community health. Mass activity has formed a notable feature of the service of official agencies. The health service in schools, industry and in war, all of which are splendid examples of such mass activity, have come to be looked upon as common-place and usual. Unfortunately, they have produced a sense of lack of responsibility in the individual. The public having received protection from outside sources knows less about obtaining medical care today than it did a generation ago when people had well-established contacts with their individual physician. Too often medical care at the present time is varied and disconnected and fails to offer the opportunity for the physician to use his position to disseminate public health education, an essential to any improvement in the field of public health. Mass activity has accomplished results in public health work but at the same time has destroyed this most valuable essential. In consideration of these facts it is therefore questionable whether the present set-up in public health work is satisfactory for further accomplishments beneficial alike to the public, the health agencies, and the physician. That this fact has been recognized by certain health departments is evidenced by the inauguration of plans which have as their prime motive an attempt to change the present trend from mass activity to individual care.

Your Committee believes that this Society can introduce a plan whereby the

physician will participate more directly in the field of preventive medicine. This plan must be efficient, and while comprehensive, yet not too elaborate. In principle it must be uniform, capable of being varied in various parts of the State, appeal to the public as adequate and economic and have the approval and support of health agencies.

Essentially such a plan would have physicians in definite areas agree to furnish the services of preventive medicine as now supplied by health departments as a distinctly separate part of their regular practice. A definite time for the performance of this work with definite fees for its service would add much to this distinction. When all physicians of a certain area agree on doing this work at the same hour it might be known as a public health hour. The work should include the various forms of immunization, all the phases of tuberculosis control work, well baby, pre-school, and school health examinations as well as prenatal care. The various phases of industrial hygiene offer opportunity for inclusion in this plan and it would seem as though such a plan offered the greatest chances for making periodic health examinations effective. It is most essential that this work be limited entirely to preventive medicine and that the physician assume no obligation or responsibility for general diagnosis or treatment as part of the plan. The plan should be inaugurated on a county basis by the county medical society which should control and direct its activities with the Committee on Public Health and Medical Education of the State Society aiding in its establishment and acting in an advisory capacity. The State Society could aid the county societies in promoting the proper publicity in the localities where the plan might be established. Postgraduate instruction covering the activities embraced in this plan could easily be provided by the Committee on Public Health and Medical Education. Uniform record forms formulated by this Committee and supplied by the State Society would make it possible to obtain correct information as to how much work the physician really does in the field of preventive medicine. The plan should be extended, in cooperation with the proper governing bodies, so as to provide these services for the indigent for which the individual physician should be compensated.

The Committee on Public Health and

Medical Education recommends that the House of Delegates urge county medical societies to carefully consider the establishment of a plan embodying the above principles.

#### MATERNAL MORTALITY

During the past year the report of the Study of Maternal Mortality of the New York Academy of Medicine has been published. Your Committee feels that it would be improper and out of place to make any comment on this report. On the other hand, it does feel that the medical profession should take an active part in the general program of maternal welfare. It offers the suggestion that commissions on maternal welfare be organized in each county medical society and that these local commissions assume the active leadership of all organizations in their respective communities working for the improvement of maternity care. It is the belief of your Committee that this problem belongs to the county medical society and should be directed by it. The definite activities of such a commission in improving maternity care will undoubtedly accomplish much more than any extensive surveys or studies. This plan has already been adopted by the Medical Society of New Jersey with excellent results. Such county maternal welfare commissions should be organized under the Committee on Public Health and Medical Education which will be prepared to advise these commissions in regard to their specific duties.

It is recommended that the House of Delegates authorize the appointment of a maternity welfare commission in each county society for the purpose as stated.

#### GENERAL COMMENT

The Committee has had two meetings this year both of which have been well attended.

The Committee is indebted to numerous physicians who have contributed their services and advice in facilitating its work. The Chairman wishes to express his appreciation to the officers of the State Society and the Chairmen of the other standing committees for their excellent cooperation.

Respectfully submitted,

THOMAS P. FARMER,

*Chairman.*

April 1, 1934.

## REPORT OF COMMITTEE ON ECONOMICS

*To the House of Delegates:*

Gentlemen:

1. The study and work needed to quickly develop the economics of Medical Service with justice to all requires vast expenditure of time and funds. We have used our endowment of both in an earnest effort to accomplish the maximum possible, over the period of three years during which the Committee has served you in (majority) continuity. The first report (1932) sketched the fields of endeavor which called for study, readjustment, and reform and contained many recommendations calculated to arouse expression of thought and opinion among the membership of the State Society. Many recommendations were adopted, more were referred for further study (most desirable!) and a few were rejected. The second report concerned the development of a few projects of surpassing importance, the Workmen's Compensation Law, the Public Welfare Law, the Public Health Council, promotion of Preventive Medicine, General Municipal Law and its amendment, Veterans Administration Hospitals, the Financing of Sickness, Physicians and the Courts, and an amendment to the Lien Law to protect hospitals, nurses and physicians from exploitation in accident cases. With wise and helpful amendments the recommendations upon these matters were adopted by your House.

2. This, the third report, offers for your parliamentary review a few matters only. The year's work has been undertaken with the aim to bring to earliest possible co-operative or legislative completion certain important projects. This can only be done after prolonged conferences between representatives of various organizations and State Departments. It is clear to us that reforms in Hospital Economics can best be planned by conference and agreement between sub-committees of hospital officials and representatives of the State Society. Also improved legislation can be facilitated by conference with State Public Health and Public Welfare officials. What the State Medical Society alone recommends may take years to filter through various official political and legislative media, if ever. With united opinion of the Society and State Departments reforms may be

prompt and conclusive. Most of our year's work has proceeded upon these principles. This report, largely informative, deals with unfinished work undertaken with enthusiasm, and developed to a point where faith in the principle of cooperation seems justified.

## WORKMEN'S COMPENSATION LAW

3. The House of Delegates, after amending certain sections, adopted this Committee's recommendations (1933) offering a new Medical Section to the Workmen's Compensation Law. Meanwhile the Governor appointed a Committee to revise the Medical Section of the Workmen's Compensation Law. From this latter Committee the Governor received a constructive final report which embodied basic principles formulated by your Economics Committee. A bill based upon this report has been drafted. Favorable legislative action will depend largely upon vigorous personal support by the members of our profession.

## ECONOMICS OF HOSPITALIZATION

4. In regard to the re-referred matters under this caption and others in all of which this Committee was to share responsibility with other Standing Committees, progress has been made. Our sub-committees were appointed early in the year. After several meetings of the Standing Committee Chairmen with our President, the primary consideration of these subjects were assigned to sub-committees from the various Standing Committees to facilitate action. (This keeps traveling and meeting expenses at lowest possible total.) In January at the meeting of Chairmen of Standing Committees, our Committee was asked to prepare agenda for these conferences of sub-committees. These have been prepared, reviewed by our complete committee in meeting, mimeographed and were forwarded to the Standing Committee Chairmen in February. In all probability some of the conferences will have been held before the session of the House of Delegates convenes.

5. In general the Committee reaffirms its views concerning the Economics of Hospitalization, excepting those paragraphs disapproved by the Reference Committee

and the House of Delegates. Some of these have interested Hospital Directors and Superintendents and are being considered at joint conferences with the Committee of the State Hospital Association reported in paragraph 6 of this report.

6. Interest in the Evans and Crawford Bills of 1933 and in the State Medical Society's approval thereof led the then President of the State Hospital Association to request informal conference with representatives of our Committee. Here it was agreed that if the representatives of hospital administration and of organized medicine could meet, discuss and agree upon a solution of any of the problems of mutual interest, it would be possible to put corrective measures into effect without delay or the necessity of action by the legislature. Or, should the latter be necessary, that having established agreement, we could jointly support it at Albany. The first informal meeting occurred in July. In November an officially appointed group met our Committee. The following topics were discussed:

Definition of indigency—in relation to medical care

Principle. The indigent is the ward of the community

Indigent should pay no fees

Beds for free hospital care—reserved for indigents

Hospital rates adjusted to eliminate deficits

No corporate practice of medicine by hospitals

Hospital insurance to cover hospital service not medical care

Sub committees were appointed to study the economics of hospital relationship to the practice of

Anesthesia

Pathology

Röntgenology

Physical Therapy

House Obstetrics, and other unit fee schemes

The sub committees are actively engaged with their respective problems. As soon as they are ready to report, another joint conference will be called. The State Medical Society and the State Hospital Association will make final disposition of these matters when sub committee and joint committee actions are reported to them. Sub-committees have met and report progress. Joint Committee action may be expected in May or June.

7. In the meantime local units and groups have taken up consideration of the

problems in the Economics of Hospitalization. We appreciate that there is constantly a local complexion to such problems. However, the fundamental principles are essentially the same over the State. In Monroe County (including Rochester) a plan of clinic admission control is reported to be working effectively. Erie County has a plan of control. In the Metropolitan area representatives and hospital administrations are conferring on the problem of clinic control and related topics. General agreement has been reached that patients seeking free medical clinic care shall be required to make a financial statement. Some hospitals have put this into effect without waiting for a general official adoption. One institution reports a 10 per cent drop in clinic attendance for the first month. Bronx County investigated one thousand consecutive admissions and demonstrated that only about 48 per cent were justly entitled to free care. Westchester County calculated the value of free care for one year. Based on moderate fees and prorated to the staff members it indicated that each one had donated the equivalent of \$400 to the care of hospital patients. In Ontario County the Society contracted with the authorities for a fixed sum to do all county cases. After two years this has been abandoned and they now insist upon a return to a fee for service plan. Suffolk County continues its outstanding position in the solution of the care of the poor.

In other states experiments are in progress. Notable work has been done in Philadelphia. The outstanding principle of their activity is that no institution shall share in a fee for a service which only a duly licensed physician can render. In St. Louis a *sworn statement* of finances has been required of all patients soliciting free medical care with a result that free care cases have dropped about 60 per cent. In Battle Creek, an organization of dentists and physicians, membership open to all licensees, contracted to care for the poor of that city for \$12,000 and the administration costs of the plan amounted to \$1600 for the disbursement of the first \$6000—an example of the costs of lay administration.

The details of all these and a considerable number of others are being accumulated and analyzed by your Committee. Out of the experiences of these *trial and error* experiments should come the under-

standing of principles upon which a planned medical care may be established. It would seem to be the function of this Committee to make contact with and correlate these various activities.

#### PUBLIC HEALTH

8. General practitioners of medicine should be the chief guardians of the public health, and no town, city, state or federal program can be complete and efficient without participation of all licensed physicians and utilization of facilities established and made available by them. Outstanding results are on record where this has been recognized.

9. *Medical Care of the Indigent.*—We are striving toward the day when provision for the indigent shall be complete and efficient. These persons and families, while indigent, should pay no fees. They should be wards of the community as represented by organized government in village, town, city, county, state or Nation (in order of responsibility). Although indigent they should be accorded the same *free choice* of physicians as other citizens possess. It is the duty and the privilege of all physicians to share in the care of the indigent. The cooperation of the County Medical Society with governmental officers in providing medical service for the indigent is very necessary. This function includes regulation of conduct and of remuneration.

10. The financial obligations of the community recognizing these principles (para. 9) are considerable, but could largely be met by abolishing extravagance in hospitalization and free care of solvent persons. Competent medical care at home is often less costly than hospitalization. Care in private general hospitals in large cities (notably in the Metropolitan area) could be secured at less cost than is obtained in the conduct of City Hospitals. Germane to this proposition is the urgent need of extending the operation of the Public Welfare Law of the State to the Greater City of New York. In accordance with our recommendation of 1933 (approved by House of Delegates) the elimination of the Home Rule Law welfare provisions of the City Charter is imperative. This would make many embarrassed private hospitals more nearly solvent and relieve physicians

of an unjust burden of charity which should be carried by the community. Moreover, it would render unnecessary any additional hospital accommodations in City Hospitals. The desirability of State Society action aiming to accomplish this needed reform in the new Charter of New York City has been urgently presented to the Executive Committee.

11. The persons and families just above indigency (perhaps from 10 to 25 per cent of the population) present a problem of special importance. Competent, complete medical service should be available to them. They have means to live comfortably in periods of good health. Illness either shatters their financial structure or they fear it will. Two features contribute largely to their distress:

1. Hesitation and delay in consulting a physician early in illness or seemingly small ills.
2. Inflexible charges of a minority but very definite percentage of physicians.

The solution of this problem is not easy. Among physicians we can popularize the universal practice of special interest and consideration for this group. We can frequently and persistently urge this group to consult their physician early. Reasonable charges should be repeatedly assured to them. We believe that the enthusiastic promotion of periodic health examinations at restricted prices would be particularly useful to this group.

12. Early in the year it was recognized that if the principles presented in pars. 8, 9 and 10 were to be brought to fruition in any considerable degree general cooperation of our Society, State governmental departments, and welfare agencies must be obtained. It was also in our records that there was a lack of harmony in the various laws which contain provisions for the care of the indigent. At a conference of State Society officials, State Department Commissioners and charity directors, and members of our committee, the following procedure was planned:

- (a) The physical assembly of operative laws having to do with the care of the indigent excluding those dealing with custodial care. (State Commissioner Adie of the Social Welfare Department is providing a research worker for this work.)
- (b) The assembling of these into an interleaved pamphlet by our Committee, this pamphlet to be distributed to the officers of this Society, to the officers of State

Departments and the charitable organizations for opinion, comment and suggestion as to elimination of faults and introduction of improvements to the end that all laws concerning the care of the indigent shall read identically and to provide efficiently against misunderstandings, misadministration, and abuses. Moreover, it is our hope that in this way the principles presented in pars. 8, 9 and 10 can become a part of all of these laws.

- (c) All suggestions are then to be formally considered by the officials of State Departments, Welfare organizations and State Medical Society officials and agreement upon needed new legislation secured.
- (d) We have the assurances of Commissioners Parran and Adie that when the work is complete, means will be found to publish, in manual form, a single volume which will contain all of the regulations as a guide for the information of those who are charged with the administration and of those who render medical care to the poor.

While this is undertaking a long and very responsible task, we believe that ultimately an admirable service to the people and justice to the physicians of the State will result. Much of the material is already in hand. We hope to have the first copy of the pamphlet edited and in circulation before July 1st. Progress onward to the completed printed edition will depend upon the receipt of returned comments.

**13. The Medical Care Needs of the Indigent.**—On the one hand, your Committee is aware of a growing volume of complaint that our profession cannot further carry the burden of *free medical care* and of the increasing exploitation of the traditional charitable practices of our profession. There is a demand for some reasonable compensation for the service which the physician renders for the general good of the community and the exercise of a more strict control of the dole of free care. On the other hand, not a few fear that compensation for the care of the poor will be only a first step to socialization of medicine with its inevitable breakdown of standards. Potent efforts to shape public opinion to some program of planned medical care for the poor and near-poor are obvious and pertinent to the economics of medicine. The State through the agency of local authority is assuming a larger responsibility in individualized service; while other influences would lead us into the pitfalls of some scheme of *compulsory health insurance*.

Volunteer agencies offering free clinic and bed care to the sick are generally in financial distress. The way out of this complex situation is not evident. Your committee has undertaken to collect and put informational matter in proper order. No definite recommendation is possible from the data now in hand.

**14. Medicine in Industry.**—Our sub-committee has submitted an adequate report of its survey during the year which has been offered for publication in the *STATE JOURNAL*. This report shows that Medicine in Industry has been obliged to submit to the general economic situation. However, management continues to increase its interest in the health of the worker. Although receiving salary reductions the physician's recently improved position has been maintained and his financial returns are on a scale comparable to those paid in other departments.

**15. Practice of Medicine by Corporations.**—(a) Our sub-committee has reviewed varying situations in this State and elsewhere. Their report is elaborate and most interesting and has been presented for publication in the *STATE JOURNAL*. Hitherto undiscussed points are raised in this report and a clearer understanding of the actual facts may be had by studying this article when published.

(b) The Counsel of the Society, Mr. Brosnan, has written a valuable opinion on the subject of the practice of medicine by corporations. This will be published in the *STATE JOURNAL* at an early date.

**16. Financing Sickness.**—We have, in accord with instructions, continued this study. We are encouraged to believe that when the banking industry has become less apprehensive of the general economic conditions, some plan of discount facilities will be arranged for handling large credits of medical care. This is the crux of the problem. Many collection agencies and discount companies continue their practice of frauds.

We have specifications of *standards* and a provisional program for the control of these affairs. The establishment of a list of *accepted* firms entails certain costs of administration. When the money to cover

the expense is provided, we shall put our plans into effect.

17. *The Cost Analysis of Medical Practice*.—No detailed or extended work (urgently needed) has been undertaken this year because it has been deemed wise to avoid the necessary expenditure at this time.

18. This committee assisted the 140 A. M. A. *Approved Roentgenologists* of the Metropolitan area in the complete organization of its group.

The New York Society of A. M. A. *Approved Roentgenologists* is now committed to the economic problems of this specialty practice, to encourage higher standards of conduct and to combat those tendencies which may demoralize such standards.

The by-laws of this organization prescribe:

"The acceptance of membership automatically waives any and all rights to claim based on any disciplinary procedure on the part of the Society or its officers, for libel and/or slander against any or all members of the Society. . . . .," indicating that this Society is set up for the purpose of self-discipline.

19. *Radio*.—There is no censorship exercised over the *advertising programs*. The public is receiving a vast amount of misinformation. Self-diagnosis and self-treatment are encouraged and health habits and regulations of questionable virtue are being promulgated. The public-health aspect of this belongs to another committee. The economic implications are fundamental and considerable.

This Committee has proposed to the Executive Committee a program of action "on the air" to oppose the influences of charlatans and patent medicine vendors. The stories of the development and growth of the science of medicine, including recent and current events of importance, told in dramatized incidents, dialogues and short lectures would result in a better informed and more sympathetic public. Such a campaign would contribute largely to public education and indirectly prove of measurable needed benefit to practitioners. Our

proposal is receiving careful conservative consideration by the Executive Committee.

20. Acknowledgment is hereby made of the regular receipt of the following publications and communications, by the Economics Committee.

1. Bulletins from Legislative Committee, Medical Society of the State of New York, relative to bills being submitted in Albany.
2. Bulletin of Medical Society of County of Nassau.
3. Westchester County Medical Bulletin, Westchester County Medical Society. Monthly Bulletin.
4. Health News, Department of Health, Weekly Bulletins.
5. Social Welfare Bulletin, Department of Social Welfare, Albany, N. Y. Monthly Bulletin.
6. Detroit Medical News, Wayne County Medical Society, New York State Weekly Bulletins.
7. Calhoun County Medical Society Bulletin, Battle Creek, Michigan. Occasional Weekly Bulletin.
8. Minutes of the Commission on Medical Economics, Philadelphia County Medical Society, Philadelphia, Pa.
9. Illinois Medical Journal.

21. To each of the component county societies of the State Society all minutes of our Committee's meetings have been forwarded. Minutes were supplemented by a series of bulletins. We have exchanged minutes with the Economic Committees of other State and County organizations. The Committee now has equipment to render such communications in a more acceptable form in so far as mechanical composition is concerned.

Respectfully submitted:

FREDERIC E. ELLIOTT, *Chairman*  
CHARLES H. GOODRICH, *Secretary*  
JOSEPH P. GAREN  
FREDERICK M. MILLER  
JOSEPH C. O'GORMAN  
TERRY M. TOWNSEND  
GEORGE C. VOGT  
CASSIUS H. WATSON  
EDWARD T. WENTWORTH  
FREDERICK S. WETHERELL

April 1, 1934.



## REPORT OF COMMITTEE ON ARRANGEMENTS

*To the House of Delegates:*

Gentlemen:

Your Committee on Arrangements announces the following arrangements for the Meeting of the Medical Society of the State of New York to be held on Monday, Tuesday and Wednesday, May 14, 15, and 16, in Utica, New York.

Arrangements have been completed with Hotel Utica, Hotel Martin and Westminster Church House in providing rooms for the Scientific Sessions and Technical and Scientific Exhibits.

The first meeting of the House of Delegates will be called to order at 10:00 A.M., Monday, May fourteenth. All meetings of the House will be at Hotel Utica. An address of welcome will be given by Mayor Samuel Sloan of the City of Utica. The dinner for the House of Delegates will be held at Hotel Utica on Monday evening. This event promises to be most enjoyable as the Committee on Arrangements has planned some novel features.

The Scientific Sessions have been divided between the two hotels and Westminster Church House, the latter being within two blocks of the hotels. The sections on Medicine, Dermatology and Syphilology, Gynecology and Obstetrics, Ophthalmology and Otolaryngology, Neurology and Psychiatry, Pediatrics, Urology, and Radiology will be held at Westminster Church House on Tuesday and Wednesday mornings. The Section on Surgery will be held in the ball-room at Hotel Martin on Tuesday and Wednesday mornings. Public Health, Hygiene and Sanitation, and Physical Therapy at Hotel Utica. The General Sessions will be held in the ball-room at Hotel Martin on Tuesday and Wednesday afternoons. The registration for Delegates will be held at Hotel Utica

and general registration for members at Hotel Martin. Printed programs of the different Section Meetings will be provided at the registration desks for Delegates and members. Scientific Exhibits of unusual interest as well as the Technical Exhibits have been assigned space in Hotel Martin.

On Tuesday evening at Hotel Utica the Annual Banquet Meeting of the Medical Society of the State of New York will be held under the presidency of Dr. Frederick H. Flaherty. It is expected that Dean Lewis, M.D., President of the American Medical Association will be the guest of the State Society at this Meeting. Following the banquet, transportation will be provided for those in attendance to the Players' Theatre, where the Players Club of Utica, N. Y., one of the most successful amateur dramatic organizations in America, will present the well-known play, "The Late Christopher Bean." The cast will include many local physicians, whose talents as entertainers need little introduction to the medical profession of the State.

The Committee for the entertainment of the ladies promises the ladies in attendance a most delightful and enjoyable time.

The Committee on Arrangements desires the profession to make early reservations for banquet tickets, which are expected, this year, to be in demand. Seats will be reserved in the order in which applications are received. It is respectfully suggested that the physicians send their reservations by mail to Dr. William Hale, Jr., 264 Genesee St., Utica, N. Y. Tickets may also be purchased during the Meetings of the Sections at the registration desks. The tickets, including both the dinner and entertainment are two dollars (\$2).

Respectfully submitted,

ANDREW SLOAN, *Chairman*

April 1, 1934

## REPORT OF THE PUBLIC RELATIONS COMMITTEE

*To the House of Delegates:*

Gentlemen:

The personnel of the Public Relations Committee has remained the same as of the preceding year, viz.: William H. Ross, Brentwood, Secretary; George M. Fisher,

Utica, William D. Johnson, Batavia, Oliver W. H. Mitchell, Syracuse, Augustus J. Hambrook, Troy, Thomas H. Cunningham, Glens Falls, and James E. Sadlier, Chairman, Poughkeepsie. Such a committee, many of whom are past officers of the State Society, all of them men interested

in the activities of their state and county organizations, has been most valuable in developing necessary activities and in establishing contacts with other organizations working in the field of medicine, and in lending encouragement to county medical societies to become active in their relationships which have to do with advancing present-day medical affairs.

All members of the committee have given generously of their time and assumed the various duties assigned to them. Seldom do we ever find an absentee at our committee meetings.

The reports of the sub-committees are prompt and indicate thorough painstaking services rendered in the tasks allotted to them. Meetings of the State Committee have occurred monthly with the exception of August and November when it was considered expedient to conserve the financial resources of the committee.

The chairman of this committee has met monthly with President Flaherty and the chairmen of the other standing committees, to discuss the activities of the various committees and disentangle the many interlocking conditions which develop and which should be allocated to some one particular committee. Formerly there was a considerable amount of lost effort and unnecessary expense attendant upon a lack of proper differentiation between the activities of some of the committees. This has been eliminated by the thoughtful action of your President in calling for a monthly conference of the chairmen, with him as the presiding officer.

All activities of the Public Relations Committee of this Society have more or less bearing on the field of the committees of Public Health and Medical Education, Medical Economics, and Legislation. In fact, it might be considered that in many instances the Public Relations Committee is the one to prepare the way and arrange a portion, at least, of the cooperation required by the other committees. This is especially so in Public Health and Medical Economics, hence it can be readily seen that these monthly conferences are most valuable.

The Committee has constantly before it the necessity of forming contacts with the governmental and lay organizations and frequently meets representatives of such organizations in conference, smoothing out difficulties that have developed, and en-

deavoring to adjust them to meet present-day medical standards.

It is gratifying to report that, to date, all such conferences have resulted in a better understanding of the particular subject considered. The agencies conferred with have been most grateful for assistance rendered by your committee.

Conference with the Department of Correction resulted in full-time physicians being disallowed to do outside medical practice to the detriment of local physicians of a community.

Conference with the Department of Health has developed a more satisfactory understanding with regards to fees for the treatment of crippled children as well as an improved distribution of these cases to the surgeons of the state.

#### DEAF AND HARD OF HEARING

Conferences with the New York League for the Hard of Hearing have resulted in a joint sub-committee of this committee and the Committee on Public Health and Medical Education being arranged, which sub-committee will work with the New York League for the Hard of Hearing, and endeavor to lead and direct their efforts. This subject is a new field and the need for study and strenuous work is very evident.

The Sub-committee on the Deaf and Hard of Hearing plans to make a study of the deaf and hard of hearing children in the state; both in the state institutions for the care of the deaf and in the public schools. The committee organized at a meeting held in New York City, October 10, 1933, as follows: Wendell C. Phillips, M.D., of New York City, Chairman, Augustus J. Hambrook, M.D., representing the Public Relations Committee, and Mahlon H. Atkinson, M.D., representing the Committee on Public Health and Medical Education. Miss Estelle E. Samuelson, of the New York League for Hard of Hearing was selected secretary. The committee is concerned principally with two problems—the care of the deaf in state institutions and the care of the hard of hearing children in the schools of the state. The medical care of the deaf children (those born without or having lost most of their hearing before speech had been established), and second, the medical care of the children with potential hearing impairments and hard of hearing children (those who have lost all or part of their

hearing after speech had been established).

There are three day and seven residential schools for the deaf in the State of New York containing about 1,700 children. Approximately 150 children are committed to these institutions annually. It is a common practice to admit children to these schools without a suitable otological examination, and in most cases no otologists are on the staffs. Several of the State institutions have been visited by members of the committee. It would seem that every school for the deaf in the State should be required to have, either a permanent otologist or visiting otologist on its staff, and that the otological care of these children be more directly supervised by the Bureau of Special Schools. The committee has compiled a list of otologists in the State of New York, such list to be available for appointments to State institutions and for the examination of the hard of hearing children in the public schools of the State.

In the public schools of the State of New York, it is established that from 4 to 10 per cent of the children, show some degree of hearing defects, that only cursory examinations are made by either the school physician or the nurse as to hearing defects, that proper otological examinations are difficult to obtain because of the expense involved, and money is not available to pay for such examinations. Deafness has been excluded as a condition to be treated under the Crippled Children Law. A few cities of the State have special classes for the hard of hearing children, but far too little is being done in this respect. New York City, Schenectady, Syracuse, Albany and Gloversville are showing the way in their efforts to give special attention to the children with hearing defects.

The Medical Society of the State of New York can render valuable help to the State Education Department in this all important study. Some means must be devised to make available a thorough otological examination of all children found with hearing defects, so that they may receive proper instruction by teachers specially trained for this important work.

The State of New York pays \$600 per year for each child in the schools for the Deaf and Hard of Hearing, besides thousands of dollars appropriated each year for new work. The benefit of the children, is one of the questions this

sub-committee will endeavor to bring to your attention, when the full report is made at some future date.

We are fortunate in having as Chairman of this joint sub-committee Dr. Wendell C. Phillips, who is most thoroughly informed as to the condition existing throughout the State with reference to the Deaf and Hard of Hearing.

#### REGIONAL CONFERENCES

Again this year we are holding regional meetings in different sections of the State and hearing from the chairmen of the Public Relations Committees of the several county medical societies invited to attend each conference. At these meetings the aims and purposes of the State Committee are outlined. Advice as to handling local medical questions is given, and the State Committee, in turn, learns at first hand just what is being done in each county with reference to the Public Relations of Medicine.

This is the second year that we have conducted these Regional Conferences and we believe them to be of decided advantage in educating the physicians composing our county units along the lines laid down by your State Committee on Public Relations.

The ultimate success of the State Committee's efforts depends upon the activity of the individual County Society committees. Your committee has conferred with the State representatives of organizations whose programs relate them to public health or the practice of medicine, with more or less satisfactory results in having programs modified or so constructed as to give the practicing physicians a greater opportunity for cooperation. But we have not always been able to secure as effective cooperation from our County Committees as we should have in order to accomplish the best results. One reason for this is that your committee does not always have as much information as it should have regarding the activities of these various agencies in the different counties. We have asked the County Societies to make surveys of the public health activities in their respective counties. A number have complied with our request and some very excellent surveys have been submitted. Unfortunately, no uniform method of preparing a survey has been developed and so the reports are not exactly comparable. In those counties where the investigations have been thorough and the committees

making the investigations have been retained, very definite progress has been made in public relations; in fact, the advantages those counties have gained over others have so impressed your committee that we have come to the conclusion that one of the most important activities which the State Society could encourage immediately is to help every County Society make a thorough investigation, recording the number of agencies whose programs, with budgets, relate to the practice of medicine or public health. Your committee is fully persuaded that all investigations should be made according to a definite plan which will permit of a comparison and evaluation.

We have observed with what ease and accuracy the organizations with which we have worked were able to present data upon problems under discussion collected state-wide; while we were obliged to base our discussion upon very limited information and in many instances impressions gathered by some of us in our visits to County Medical Societies. The uncertain character of our information has many times led us to accept data collected by some one of the lay or governmental agencies. This has not always been the best policy for us, because, naturally, the agency that collects the information does so from its own point of view and to establish its own program. No agency can be expected to have the point of view of the practicing physician uppermost all the while, and, therefore, we are satisfied that the State Society owes it to itself to provide a way of investigating the activities of its various units, collecting and studying the data in a comparative way and basing its future program upon the findings of such a general survey. *We recommend* that the collection of data should be supervised by our Executive Officer, but he will need assistance. Therefore, we suggest that a physician be employed as field agent whose prime duty shall be to aid County Society Public Relations Committees in making the surveys suggested above and later assist the Societies themselves in developing programs that will make the greatest use of the information collected by the surveys. It is most important at this time when schemes for socializing medicine are likely to originate anywhere in the State and from any organization, that our organization has at its command the most accurate data regarding its activities and

the activities of its component societies and individual members. We cannot afford to rely on information supplied by those who would socialize us.

#### MEDICAL ASPECTS OF THE PUBLIC WELFARE LAW

The present administration of the medical aspects of the Public Welfare Law is far from satisfactory and your committee believes that this should be adjusted through conference with local governmental officials and the Public Relations Committee of each County Medical Society. At present, in a few counties, the relationship with welfare officials, and the fees for work done in caring for the indigent, are satisfactory, but in most of the counties the medical men are either receiving nothing for their services or they are demanding more than should be required for the care of indigents. Hence this committee issued the following bulletin under sanction of the Executive Committee:

#### COMPENSATION OF PHYSICIANS FOR SERVICES RENDERED INDIGENTS

Physicians are not concerned with the care of indigents for the purpose of gain but to render needed services in the prevention and treatment of disease. Compensation sufficient to protect physicians against economic loss is rightfully expected and should be provided from public funds.

The Public Relations Committee doubts the wisdom of adopting a fee schedule—in itself—as a guide for compensating physicians for the care of indigents. The committee is of the opinion that a committee in each county society should establish close cooperative relationship with government representatives. In conference they should decide the compensation to be paid physicians.

It is to be especially stressed that compensation for the care of indigents will be minimum and not representative of charges made by physicians for like services rendered patients supporting themselves from personal funds.

Cooperation between government welfare officials and duly elected representatives, preferably the Public Relations Committee, of the County Medical Society, should result in a satisfactory agreement.

#### LECTURE TO MEDICAL STUDENTS

Upon invitation from the Deans of each of the nine medical schools of the State it

was arranged for our secretary, Dr William H. Ross, to deliver, in each medical school, to the senior students, a lecture dealing with Organized Medicine and Medical Public Relations. It has been most heartening to the committee to note the response from the Medical Schools and their evident appreciation of the fact that the Medical Society of the State is interesting itself in the future of the coming medical man. I believe this is one of our most important activities for it is beginning with the young man before he is graduated and encourages him to become a real factor in the County and State Medical Society.

#### STATE-AIDED COUNTY HOSPITALS

Your committee has watched with interest and concern the administration of the state-aided hospitals in the counties of Wyoming, Lewis and Greene and has assisted your President in adjusting a radical difference of opinion in the management of the Lewis County Hospital. Impending trouble between the Medical Board and the Board of Managers of the Greene County Hospital was easily cared for through the active cooperation and assistance of the Commissioner of Health and your Public Relations Committee.

It gives me pleasure to suggest that the State Commissioner of Health has been most cooperative in his desire to see to it that the physicians working in each one of these hospitals shall have adequate opportunity to carry on their particular type of professional work, and is observing most rigorously "The Rules and Regulations Governing State-aided County Hospitals," which were approved by the Medical Society of the State of New York, the Commissioner of Health of the State of New York, the Public Relations Committee of the Medical Society of the State of New York during the year 1929, and which are as follows:

#### *Rules and Regulations Governing State-aided Hospitals*

1 All registered physicians residing in the county shall be eligible to membership on the staff. Physicians residing outside of the county may use the hospital but cannot become voting members of the staff.

2 From their number they shall nominate for election by the board of managers a medical board of not less than five members.

3 The medical board, subject to the approval of the board of managers, and the State Commissioner of Health shall have supervision and control of all medical service in the hospital. This shall include appointments for the necessary,

efficient and adequate surgical, medical, special and nursing services of the hospital, the preparation of rules and regulations for the conduct of the professional work of the hospital and the formulation of whatever by laws seem necessary for the efficient conduct of its (medical board's) business.

Your committee believes that the above rules and regulations although few in number, are sufficient and that it is not necessary to develop any further rules and regulations as provided for by the House of Delegates, April, 1933.

It is respectfully requested that observance of these rules and regulations governing state-aided hospitals shall be left in the future with the Committee on Public Relations. There should not be a dual responsibility in this important matter.

The House of Delegates at the annual meeting in 1933 referred to the Public Relations Committee the following question:

"Why so few physicians form part of the organization or are employed by the National Health Organizations?"

This is one of the two problems submitted wholly to the Committee on Public Relations by the last House of Delegates and has been given thought and study by this committee with the following conclusions:

Physicians frequently are not interested in National Health Organizations because of being so busy with their private practices along the lines of curative medicine.

National Health Organizations are mostly concerned with preventive medicine. The average physician does not feel at home in that field of medicine. He received his training long before the importance of preventive medicine was understood and before much teaching of it was done. Even now not enough time is devoted to it in our colleges.

The physician still regards himself as an emergency man and is interested only in well developed pathology. Since it is difficult to interest him in preventive measures among his own private patients we cannot expect to interest him in preventive medicine on a national scale.

The type individual he is, the kind of training he has had, a lifetime of working only with the sick, all affect his attitude toward Public Health Organizations.

Many physicians have been alienated from Public Health Organizations by their frequent determination to ignore the medical profession and to infringe upon terri-

tory rightfully belonging to it. Their lack of understanding of the need of a satisfactory economic basis for medicine—all of these enter into the physicians' lack of interest.

That there should be a closer cooperation no one will deny. Such cooperation must come about through educating the public, the National Health Organizations and the medical profession. This eventually will result in cooperative effort which will bring about the betterment we all are working for and eventually mean a greater proportion of professional personnel in the National Health Organization.

#### REFERENCE FROM THE HOUSE OF DELEGATES, APRIL, 1933

The House of Delegates of the Medical Society of the State of New York at its last annual meeting in April, 1933, referred to the Committee on Public Relations for study and plan of action, the following subject, viz:

"To develop a plan to prevent the State Department of Health from becoming an agency for the treatment of crippled children."

This reference from the House of Delegates was given to a subcommittee, who has given it careful consideration from every angle and your committee believes that little or nothing can be done about this matter except by repeated conferences with the State Department of Health and the development of a program acceptable both to the Commissioner of Health and the medical profession of the state.

Such conferences have been held from time to time for the past several years and have uniformly resulted in a more satisfactory understanding of the situation and have been of material advantage to the surgeons of the state doing orthopedic work, as well as to the public at large, and the children who come under the jurisdiction of the Crippled Childrens Act.

#### REFERENCE FROM THE HOUSE OF DELEGATES, APRIL, 1933

"In conjunction with the Committees on Public Health and Medical Education and Medical Economics to draft a desirable Public Welfare Law."

This committee has appointed a subcommittee to consider with the Committee on Public Health and Medical Economics this reference from the House of Dele-

gates, but the sub-committees have not been able to confer sufficiently to render a report at the present time and respectfully request that an additional amount of time be allotted them before opening up this subject of medical care of the indigent in this period of social reconstruction and uncertain conditions. A supplementary report will be presented when the study is completed.

#### REFERENCE FROM THE HOUSE OF DELEGATES, APRIL, 1933

"In conjunction with the committees on Public Health and Medical Economics and the Counsel of the State Society, to study the organization of the Public Health Council and Regulations of the Sanitary Code."

This, likewise, has had an insufficient amount of time for proper study and development of a plan.

It is suggested that an additional amount of time be given the above named three committees in order to consider this most important reference.

#### FUTURE WORK OF THE COMMITTEE

Make competent surveys of the work of the medical profession in each county of the state.

Stimulate and endeavor to activate county medical societies in developing the Public Relations of Medicine.

Efforts to stimulate the individual members of the profession into greater activity with reference to the Public Relations of Medicine.

Instruct the Medical Profession as to what is being done by lay organizations, and show them that one of the reasons why medicine may become socialized, and about the only reason, is because of medicine's unwillingness to work with other agencies who are trying to direct the trends of medical service. The sooner we take the first step, which is a completed survey in each County Medical Society, in directing the forces now trying to change the form of medical practice, the better it will be for the future of our profession.

Greater effort to get the young doctors interested in their Medical Relations to the public and in their county society activities.

The work next year should be done in each county society. It is there that the problems must be solved.

The work of this committee has been

enhanced through the intimate and very cordial cooperation and interest in the Public Relations of Medicine shown by our President Dr. Frederick H. Flaherty, and the Chairman of the Committee on Public Health and Medical Education, Dr. Thomas P. Farmer. We wish to express to them our very sincere thanks and appreciation.

Our Executive Officer, Dr. Joseph S. Lawrence, has been most intense in his desire to further the work and activities of your committee and has worked diligently during the past year to enlarge the scope and assist the committee in developing proper medical Public Relations throughout the state.

Your committee has earnestly endeavored to develop an active interest in the Public Relations of Medicine throughout the state. It feels encouraged by the active

way in which many of the county societies are taking hold of the various problems of present-day medicine; but it recognizes that there still is a vast amount of work to be done; that up to date it might be said that only the surface of the great problem has been handled.

If medicine in this state is going to escape socialization there must be a united profession in each county activating itself in the interests of a better and broader Medical Public Relations, and assuming a leadership over all organizations having to do with the health problem. Therefore, we bespeak your very careful consideration of all of the problems relating to the activities of this committee.

Respectfully submitted,

JAMES E. SADLIER, *Chairman*

April 1, 1934

## REPORT OF THE COMMITTEE ON MEDICAL RESEARCH

*To the House of Delegates:*

Gentlemen:

In behalf of your Committee on Medical Research, I have the honor to present the following report:

The many upsets in the elections last fall made it certain that there would be a different alignment of the committees appointed with the opening of the Legislature. As soon as the personnel of the Committees could be determined, an effort was made to inform all members of the Code Committee in regard to the attitude of the State Society toward animal experimentation. This work was actively carried on by personal letters from influential members of the community and by letters from members of the committee. All County Medical Societies in the state were contacted in regard to the essential differences between the Humane Societies and the Antivivisectionists.

Mr. Breen introduced a bill into the Assembly, identical with the perennial Vaughn bill. At the hearing on this bill on February 28, the following distinguished members of the medical profession presented arguments against the bill: Drs. Peyton Rous, Florence Sabin, and C. P. Rhoads of the Rockefeller Institute; James W. Jobling, Professor of Pathology at

Columbia University; John Wyckoff, Dean of New York University and Bellevue Hospital Medical College; G. Canby Robinson, Dean of Cornell Medical School; George Whipple, Dean of the University of Rochester Medical School; Frederic Sondern, representing the Academy of Medicine, New York City; Augustus Wadsworth, representing the State Laboratories; Walter L. Mattick, of the State Institute for the Study of Malignant Disease and Buffalo Medical School; Barbara B. Stimson, Assistant Surgeon at the Presbyterian Hospital, New York City, and Harold Rypins of the State Department of Education.

Dr. Murphy, who is now an Assemblyman, and who annually appears for the opposition was present and spoke for the bill. Several members of the Antivivisection Society also appeared to speak in favor of the bill. No convincing reasons for the amendment were brought forward by those favoring the bill.

Your Chairman wishes to thank Dr. Joseph S. Lawrence, Dr. Frederic Sondern, and Dr. Peyton Rous for their valuable assistance during his term of office.

Respectfully submitted,

JOHN J. MORTON, *Chairman*

April 1, 1934

## REPORT OF THE TREASURER

BALANCE SHEET, DECEMBER 31, 1933

Assets		
CURRENT ASSETS: Cash		
In Banks .....	\$1,165.08	
Petty Cash .....	29.42	
		\$1,194.50
Accounts Receivable		
Journal Advertising .....	1,940.62	
Directory Advertising .....	2,375.00	
Directory Sales .....	1,150.68	
		5,466.30
Investments—(Bonds—Par Value \$96,000.00; Cost \$94,785.26). At		
Market Value .....		80,943.13
Accrued Interest on Investments.....		1,409.88
		\$89,013.81
TRUST FUND ASSETS: Union Dime Savings Bank		
Lucien Howe Prize.....	849.67	
Merrit H. Cash Prize.....	418.40	
		1,268.07
Investments—(Bonds—Par Value \$71,000.00 Cost \$69,467.50). At		
Market Value .....		55,464.06
Accrued Interest on Investments.....		558.65
Cash in Banks.....		8,898.37
		66,189.15
DEFERRED CHARGE: Expense Account Annual Meeting 1934.....		43.33
FIXED ASSETS: Furniture and Fixtures.....		1.00
		\$155,247.29
Liabilities, Trust Funds and Surplus		
CURRENT LIABILITIES: Accounts Payable.....		\$133.80
DEFERRED INCOME: 1934 Annual Dues Received in Advance.....		2,110.00
TRUST FUNDS:		
Lucien Howe Prize Fund.....	\$3,458.27	
Merrit H. Cash Prize Fund.....	1,693.76	
Wear, Tear, Loss and Depreciation Fund.....	26,550.00	
Journal Fund .....	18,784.37	
Directory Fund .....	15,702.75	
		66,189.15
SURPLUS (General Fund):		
Balance—January 1, 1933.....		81,737.37
Add: Increase in Market Value of General Fund		
Investments from January 1 to December 31,		
1933 .....	\$6,065.38	
Excess of Income Over Expenses for the Twelve		
Months Ended December 31, 1933.....	23,064.09	
		29,129.47
		110,866.84
Deduct: Transferred to Wear, Tear, Loss and Depreciation Fund		24,052.50
Balance—December 31, 1933.....		86,814.34
		\$155,247.29

## JOURNAL ACCOUNT FOR TWELVE MONTHS ENDED DECEMBER 31, 1933

Expenses		Income	
Publication—Printing .....	\$26,209.98	Advertising .....	\$31,237.02
Postage .....	3,383.75	Subscriptions and Sales....	216.01
Rent .....	1,528.98	Income from Dues.....	12,697.00
Office Salaries .....	5,259.10		\$44,150.03
Commissions .....	5,952.36		
Discounts .....	864.02		
Hon. — Editor-in-Chief...	500.00	Net Cost of Journal.....	6,218.91
Executive Editor's Salary.	4,500.00		
Traveling Expense .....	140.85		
Literary Editor's Salary...	1,200.00		
Stationery .....	141.91		
Subscriptions .....	148.39		
Telephone .....	175.42		
Office and Sundry Expenses	364.18		
			\$50,368.94
	\$50,368.94		



DIRECTORY ACCOUNT FOR TWELVE MONTHS ENDED DECEMBER 31, 1933

Expenses		Income	
Publication—Printing .....	\$11,264.31	Advertising .....	\$3,405.00
Salaries .....	4,944.71	Sales .....	3,072.04
Commissions .....	629.25	Income from Dues.....	12,697.00
Discounts .....	20.50		
Delivery .....	1,580.30		\$19,174.04
Stationery .....	413.50		
Postage .....	964.80	Net Cost of Directory....	696.74
Sundry Expense .....	53.41		
	<u>\$19,870.78</u>		<u>\$19,870.78</u>

STATEMENT OF INCOME AND EXPENSES FOR TWELVE MONTHS ENDED DECEMBER 31, 1933

Expenses		Income	
Committee on:		Annual Dues Received.	
Legislation .....	\$5,500.46	Arrears .....	\$491.00
Public Health .....	7,070.36	1932 .....	12,920.00
Economics .....	1,712.33	1933 .....	113,562.00
Public Relations .....	1,564.81		
Scientific Work .....	707.63	Total Dues Received..	\$126,973.00
Medical Research .....	358.88		
Cost of Medical Care...	361.51	Less:	
Control Certified Milk...	28.97	Dues Credited to Journal	
Co. Secretaries' Conference	442.40	Account .....	\$12,697.00
Tri-State Conference .....	94.35	Dues Credited to Directory	
District Branches .....	2,324.45	Account .....	12,697.00
Special Appropriation—Dis-			<u>25,394.00</u>
	200.00		
	8,000.00	Balance .....	\$101,579.00
	<u>988.26</u>		
Expenses .....	3,500.00	Interest Earned on General Fund In-	
Assistant Secretary .....	150.00	vestments .....	3,958.64
Salaries—General .....	14,667.75	Interest on Bank Balances.....	53.74
Legal Expenses .....	12,194.29	Clerical Work .....	113.84
Traveling Exp.: A. M. A.	1,267.20	Refund—Railroad Mileage Book....	17.87
General .....	3,279.65		
Annual Meeting—1933....	2,857.85		
Governor's Committee .....	492.51		
Malpractice Def.: Reprints	451.00		
Auditing .....	530.00		
Rent .....	2,750.00		
Stationery and Printing...	976.42		
Postage .....	678.19		
Telephone .....	150.08		
Custodian Fees (Invest-			
ments) .....	268.00		
Insurance Premium—Fire.	17.57		
Office, Sundry Expenses..	827.68		
Bad Debts Charged Off:			
Journal:			
1933 Advertising 43.00			
1932 Advertising 307.70			
	<u>350.70</u>		
Directory:			
1932 Advertising 620.00			
1931 Advertising 360.00			
	<u>980.00</u>		
Net Cost of Journal Transferred from			
Journal Account .....	6,218.91		
Net Cost of Directory Transferred			
from Directory Account.....	<u>696.74</u>		
Total .....	<u>\$82,659.00</u>		
Excess of Income over Expenses			
Transferred to Surplus.....	<u>23,064.09</u>		
	<u>\$105,723.09</u>		<u>\$105,723.09</u>

The above accounts have been audited and found correct by Wolf & Company, C.P.A., New York State.

Respectfully submitted,  
FREDERIC E. SONDERN, *Treasurer.*

## REPORT OF THE BOARD OF TRUSTEES

*To the House of Delegates:*

Gentlemen:

Throughout the year the Board of Trustees carefully studied every budgetary item presented by the Executive Committee, reduced every possible expenditure to necessary limits, and continued a careful scrutiny of every financial proposal with the purpose of conserving every resource for the future needs of the Society.

The Treasurer's report shows extraordinary strength in a depression year, and such a superior quality of investment, largely due to the acumen of Dr. Sondern, that every member may justly congratulate himself upon the financial position of his organization.

The elimination of the usual deficit from the Journal account is a gratifying saving at a time when organized medicine is being sharply attacked by lay organiza-

tions which are trying to dominate the distribution of medical service.

The need was never greater for strong financial support of defensive and offensive plans for the promotion of the best interests of the medical profession.

The time has come when every member must realize the importance not only of maintaining strong reserves but also the necessity of arming the Society for a battle which threatens the very life of medicine as a profession which desires to render the highest quality of service to all who need it.

Imminent emergency may require increased financial support from every member of the Society and strong cohesive action.

NATHAN B. VAN ETEN, *Chairman*

April 1, 1934

## REPORT OF THE BOARD OF CENSORS

*To the House of Delegates:*

Gentlemen:

The Board of Censors convened in the Offices of the State Society, 2 East 103rd Street, New York City, December 14, 1933, at 4:00 P. M. to hear the Appeal of Dr. Edward E. Hicks from the action of the Medical Society of the County of Kings with respect to the levying of the assessments for the year 1933.

The following Censors were present: C. Knight Deyo, Louis A. Van Kleeck, Clark G. Rossman, Raymond G. Perkins, Edward R. Evans, Stuart B. Blakely, James M. Flynn, Henry W. Ingham—Frederick H. Flaherty, President presiding—Daniel S. Dougherty, Secretary. The Legal Counsel of the State Society was also present.

After a careful consideration of the facts presented, the Appeal was denied on the following grounds:

*First:* Each County Medical Society is given the right to fix the amount of the annual dues and assessments to be collected from its members; (Membership Corporation Law)

*Second:* Each County Society shall have full power and authority to enforce discipline among its members and obedience to its rules, and to expel or otherwise discipline its members as it may deem for the best interests of the Society; (Membership Corporation Law)

*Third:* In accordance with its by-laws, the respondent Society fixed at its Annual Meeting the dues and assessments for its members for the year 1933;

*Fourth:* The By-laws under which these dues and assessments were levied by the respondent Society upon its members, were duly approved by the Council of the Medical Society of the State of New York;

*Fifth:* The appellant, Dr. Hicks, has failed and refused to pay the dues and assessments duly levied by the respondent Society as aforesaid.

Respectfully submitted,

DANIEL S. DOUGHERTY, *Secretary*

April 1, 1934.

# REPORT OF THE COUNSEL

*To the House of Delegates*  
Gentlemen.

Your Counsel herewith submits his report for the activities of the Legal Department of the Medical Society of the State of New York for the period from February 1, 1933, to and including February 28, 1934. It will be noted that this report covers a period of thirteen months.

This has been a busy year indeed both in court and in consultation. Within the proper confines of a report of this character conclusions only can be stated, but these give no fair picture of the amount of work involved or the responsibility assumed by our Department.

At the outset of this report, your Counsel wishes to acknowledge his indebtedness for the assistance, cooperation and many acts of personal kindness on the part of officers and committee men of your Society.

In making his report your Counsel adheres to the convenient category employed in previous years whereby his activities have been divided into three main divisions: (a) The actual handling of malpractice actions before courts and juries and in the appellate tribunals, (b) counsel work with officers, Committees and individual members of the Society and (c) legislative advice and activities.

## LITIGATION

The possibility of a malpractice action and the hazard to the physician in having his rights passed upon by twelve lay jurors has been so often written and spoken about by your Counsel that it is unnecessary in this report to comment at any great length upon this subject.

Your Counsel is pleased to be able to report that in the field of litigation his

TABLE I

Comparison of the Number of Suits Instituted and Disposed of in 1932-1933 and 1933-1934

	Instituted		Disposed of	
	1932-1933	1933-1934	1932-1933	1933-1934
1 Fractures, etc	24	29	15	21
2 Obstetrics, etc	19	22	14	15
3 Amputations	3	2	2	4
4 Burns, X ray etc	21	22	15	18
5 Operations Abdominal, eye, tonsil, ear, etc	76	68	60	50
6 Needles breaking	2	1	2	4
7 Infections	16	19	24	15
8 Eye infections	8	4	4	2
9 Diagnoses	27	26	9	26
10 Lunacy commitments	3	5	2	
11 Unclassified — medical	26	32	11	49
Totals	225	230	158	204
Further Comparisons				
Actions for death	24	24	11	19
Infants' actions	32	15	19	20
Totals	56	39	30	39
How Disposed of				
Settled			28	41
Dismissed, discontinued, abated or tried (verdict for defendant)			123	160
Judgment for plaintiff			7	3
Totals	—	—	158	204
Further Comparisons				
Appeals Judgments for defendant				5
Judgments for plaintiff				2
Pending on January 31 1933	568		1	
Pending on February 28, 1934	594			

associate, Mr. William F. Martin, has continued his splendid work. From individual members of the Society whom he has defended and from many Supreme Court judges throughout the State have come to me expressions of approval of Mr. Martin's ability and splendid personal qualities. Excellent work has also been done by your Counsel's associate, Mr. Thomas H. Clearwater, the attorney for the Society. Mention should also be made of the splendid spirit of loyalty and devotion shown by your Counsel's entire office staff.

In connection with the accompanying Table I it should be noted that this year we have treated as one case actions where a wife is the main plaintiff but her husband also sues for loss of services, or where a child is the main plaintiff and there is an accompanying action by the father for loss of services. These really constitute but one case and are tried as such, and hence we have followed this method in our present report.

For the purpose of proper comparison, therefore, we have omitted the loss of services actions from last year's table.

With this preliminary statement, we note that there were commenced in the present thirteen-months reporting period 230 actions, as against 225 during the previous eleven-months reporting period. We disposed of 204 actions as against 158 actions during the preceding reporting period. These figures, of course, do not include a large number of claims in which we were successful in persuading the claimants or their attorneys not to bring suit. There remain a number of claims outstanding in which suit may ultimately be brought. Of the 204 actions disposed of during the reporting period, 41 have been settled. In 160 actions we have obtained judgments for the defendant after trial, or they have been disposed of through dismissal, discontinuance or abatement. In 3 cases only was judgment rendered in favor of the plaintiff.

We were also successful in securing favorable results from the Appellate Division in 5 cases which were appealed.

It will be noted from Table I that there were pending 594 cases.

Following is a list of the subject of litigation proper to point out that your

First: Each of us offered to your members given the right to adequately protect themselves from the annual dues and the hazard of litigation selected from its list of your group plan. (Corporation Law) a decade it has won

the commendation of the members of your Society. Mention here should be made of the splendid work done by the Insurance Committee under the able leadership of Dr. Frederic E. Sondern. This Committee representing your Society holds a number of meetings every year in connection with the problems that are before them for consideration.

Table II hereto appended, gives a comparison of the number of members insured in 1931, 1932, 1933 and 1934, and the number of members in the County Societies, and the percentage of insured members in the County Societies, and in the entire State Society. The figures are sufficiently clear to obviate the necessity of extended comment.

#### COUNSEL WORK

During the period of this report, your Counsel has prepared for publication in the Society's Journal articles in the nature of editorial comment. These editorials have included the following:

- Insanity as a Defense in Criminal Cases.
- Illegal Practice of Medicine by a Licensed Physiotherapist.
- Private Hospitals—Control over Unruly Patients.
- Physicians—Good-will of Practice not Subject to Taxation at Death.
- Property Rights in Gifts Given in Contemplation of Marriage.
- The Medical Grievance Committee Decides an Important Case.
- Hospitals—Conditions Attached to Testamentary Gift Held Valid.
- Jurors—Misconduct Held Contempt of Court.
- The Vasko Case.
- Hospitals—Power to Discipline Physicians on its Staff.
- Malpractice—Foreign Body—Physicians Held Blameless.
- Malpractice—Recent New York Decision Exonerating Physician.
- Criminal Law—Statute Providing for Alternate Juror.
- Pharmacists—Liability for Negligence in Filling Prescription.
- Insurance—Surgeon's Policy Against Illness and Accidental Injury.
- Malpractice—Foreign Body.
- Physician and Patient—Privileged Communications.
- Federal Court Ruling on Chiropractic.
- Medical Testimony—Legal Rights of Unborn Child.
- Personal Injury Action—Liability of Golf Player.
- Validity of Contracts to Provide Professional Services during Lifetime.
- An Ungrateful Patient.
- Legal Practice of Medicine—Diagnoses Held Violation of Statute.
- Contracts—Agreements between Physicians Limiting Practice.

TABLE II

Comparison of the Number of Members Insured in 1931 1932, 1933 and 1934 and the Number of Members in the County Societies and the Percentage of Insured Members\*

	1931			1932			1933			1934		
	A,	B,	C	A,	B	C	1,	B,	C	A,	B,	C
Albany	247	145	59	248	147	59	257	160	62	254	146	57
Alleghany	32	10	31	31	12	39	31	13	42	33	14	42
Bronx	924	477	52	964	508	53	1 007	516	51	1,013	513	51
Broome	130	62	48	136	70	51	141	80	58	145	88	61
Cattaraugus	47	35	74	48	32	67	46	33	72	45	31	69
Cayuga	53	30	56	59	35	60	63	35	56	64	35	55
Chautauqua	90	43	48	89	52	60	93	55	59	89	54	61
Chemung	66	46	70	68	51	75	69	51	74	69	49	71
Chenango	34	21	62	32	21	65	33	21	64	33	22	67
Clinton	29	15	52	30	17	57	29	18	62	29	16	55
Columbia	36	19	53	36	20	55	37	22	59	36	21	58
Cortland	25	7	36	24	12	50	23	15	65	24	16	67
Delaware	25	5	20	27	6	45	27	10	37	28	14	50
Dutchess Putnam	124	64	52	128	63	50	138	74	54	151	77	51
Erie	735	451	61	807	465	58	809	455	56	798	440	55
Essex	22	13	59	21	14	69	20	15	75	20	15	75
Franklin	55	12	22	54	14	26	53	18	34	51	18	35
Fulton	36	23	64	36	23	64	36	22	61	38	25	68
Genesee	34	16	44	31	16	52	28	17	60	28	15	54
Greene	21	12	57	22	13	60	21	14	67	23	14	61
Herkimer	47	36	77	46	34	74	46	37	80	44	34	77
Jefferson	83	41	49	85	44	52	86	46	53	87	46	53
Kings	2,225	1,265	57	2,260	1,298	57	2,301	1,368	59	2,241	1,175	52
Lewis	15	6	40	16	6	38	18	9	50	19	10	53
Livingston	38	16	42	35	17	49	34	16	48	31	21	70
Madison	31	14	45	33	14	42	30	13	43	30	14	47
Monroe	460	269	58	475	285	60	467	294	63	453	292	64
Montgomery	48	11	23	47	13	28	49	18	36	52	18	35
Nassau	182	119	65	221	135	61	243	146	60	253	150	60
New York	3,945	2,374	60	3,995	2 376	60	4,077	2,339	57	3,951	2,237	57
Niagara	110	62	56	96	69	73	105	75	71	98	73	74
Oneida	195	96	49	205	99	48	200	100	50	191	108	57
Onondaga	342	234	68	346	247	71	340	252	74	333	221	66
Ontario	78	37	47	78	37	47	75	38	51	67	39	58
Orange	113	70	61	111	71	64	115	79	69	122	87	71
Orleans	20	9	45	21	9	43	23	10	43	23	10	43
Oswego	45	26	58	47	26	55	46	28	61	43	31	72
Otsego	44	22	50	45	25	56	48	33	69	50	26	52
Queens	496	324	66	549	356	65	575	372	65	568	366	64
Rensselaer	123	50	41	124	56	45	118	65	55	107	68	63
Richmond	95	51	54	99	50	51	99	51	52	100	46	46
Rockland	53	28	53	56	29	52	56	29	52	61	28	46
St Lawrence	59	25	42	61	24	40	64	27	42	61	26	42
Saratoga	50	24	48	57	24	42	50	30	60	53	31	59
Schenectady	120	86	72	123	83	68	130	90	69	133	89	68
Schoharie	19	6	31	20	8	40	20	9	45	20	11	55
Schuyler	10	5	50	11	5	45	12	6	50	12	6	50
Seneca	21	9	43	22	9	41	22	10	45	22	11	50
Steuben	70	41	59	73	41	56	69	44	64	74	44	60
Suffolk	129	50	39	125	61	49	129	65	51	144	69	48
Sullivan	35	21	60	36	22	61	37	21	57	38	25	70
Tioga	19	7	37	21	8	38	22	9	41	24	10	42
Tompkins	57	27	47	59	29	50	59	33	56	59	32	54
Ulster	64	36	56	66	38	58	69	44	67	69	40	58
Warren	43	27	63	44	27	61	42	29	69	43	28	65
Washington	41	16	39	41	18	44	41	19	46	39	18	46
Wayne	44	32	72	43	30	70	42	29	69	44	27	61
Westchester	429	230	54	460	274	60	485	284	59	515	290	56
Wyoming	29	12	41	31	10	32	33	12	36	34	15	44
Yates	20	14	70	21	14	67	19	15	79	22	17	77
	12,812	7,334	57	13,195	7,699	58	13,457	7,925	59	13,299	7,512	56

\* A=number of members in County Society, B=number of members insured C=percentage insured

Your Counsel has also digested and there have been published in the State Journal reports upon malpractice actions which it has been felt were of special interest to the members of the profession. The case reports published during the previous year are as follows:

Claimed Negligent Herniotomy.  
Alleged Negligent Operation of the Right Eye.  
Death Due to Status Lymphaticus.  
Treatment of Injuries to Hand Sustained in an Accident.  
Particle of Steel in Eye.  
Burn from Lamp Treatment.  
Claimed Negligent Diagnosis and Treatment of Right Leg and Shoulder.  
Claimed Negligent Delivery.  
Alleged Negligent Treatment of Fractured Fibula and Internal Malleolus.  
Alleged Malpractice in Diagnostic Work.  
Claimed Negligent Treatment of Syphilis.  
Ambulant Treatment of Hernia.  
Fracture of Pelvis Claimed to Have Resulted from Delivery.  
Burn Discovered Subsequent to Operation.  
Alleged Improper Treatment of Fracture.  
Alleged Injury to Tooth during Tonsillectomy.  
Broken Aspirating Needle.  
Claimed Incorrect Diagnosis of Mastoiditis.  
Claimed Failure to Diagnose Pelvic Condition.  
Death Following Hysterectomy.  
Claimed Negligence to Infant after Delivery.  
Subglenoid Dislocation of Humerus.  
Malpractice Cause of Action Barred by the Statute of Limitations.  
Burn from Electrical Knife.  
Claimed Negligent Application of Argyle to Throat.  
Epileptic Seizure during Treatment.  
Portions of Placenta Retained after Delivery.  
Charges of Negligence in Performing Hysterectomy.  
Alleged Negligence in Performing Plastic Operation.  
Broken Needle Embedded in Jaw.  
Erroneous Diagnosis of Tumor.  
Gauze Sponge Swallowed by Child.  
Alleged Negligent Treatment of Laceration of Palm.  
Broken Aspirating Needle.  
Alleged Negligent Administration of Diathermy Treatment (2).  
Glaucoma Following Treatment of Eyes.  
Burn Following Use of Cautery Knife.  
Alleged Negligence in Plastic Surgery.  
Alleged Negligent Operation for Hemorrhoid.  
Claimed Negligence in Operation on Eye-socket.

Your Counsel is pleased to learn from the members of your Society that they find these reports and editorials interesting and instructive.

In addition to his other duties, your Counsel receives frequent requests for opinions on various subjects. It should be remembered that the Executive Committee of your Society has ruled that requests for legal opinion, whether coming

from individual members of your Society or from component County Societies, must in the first instance be referred to that body for action. If the Executive Committee deems the inquiry a proper one for opinion by the Legal Counsel, it refers the same back to him for reply. Some of the matters upon which advice has been thus rendered are the following:

Communication requesting information in regard to hospital records: "As to the legal and moral grounds on which any doctor or interne on a hospital staff, might have access for purposes of study and research to the medical records of the patients of the hospital, including the private and semi-private patients of other doctors."

Inquiry as to whether it is ethical for a doctor to practice his profession under a contract, and do anything he sees fit and still continue to be a member in good standing in a County Medical Society.

Inquiry from a physician as to the advisability of obtaining a signed release from patients before operation.

Communication from a physician concerning the legality of a surgeon extracting teeth in the course of his work in oral surgery.

Communication from a physician as to whether or not it is proper for an optometrist to be permitted to be installed in a County Hospital for the purpose of doing refraction and filling his own prescriptions for glasses, this being done under the supervision of an oculist.

Communication from a physician requesting information concerning the Welfare Laws: (1) Are physicians required to make known diagnoses? (2) Are physicians required to list to welfare officers all treatments?

Inquiry as to whether or not the New York State sales tax affects physicians.

Inquiry from a component County Society asking for some concrete suggestions with respect to ridding the community of chiropractors.

Inquiry from a component County Society regarding a proposal to incorporate as a membership corporation.

Communication from a physician requesting an interpretation of the State Nursing Law.

Inquiry as to the correct method of reporting unethical nurses to the proper authorities.

Inquiry as to whether or not a charity patient receiving attention in a hospital can sue for malpractice the physician in charge of his case, said physician receiving no compensation from the hospital or from the patient for services rendered.

Communication inquiring as to the rights of a physician, where a patient has died, and where there is a will contest, including specific inquiries as to the following: (1) Are the doctor's records private and privileged communications? (2) Is it proper for any lawyer or group of lawyers to invade a physician's office and obtain access to records therein? (3) To what extent may the doctor testify in court under such circumstances.

Communications requesting an opinion as to whether the administration of anesthesia by a nurse anesthetist constitutes a violation of the Medical Practice Act.

Communication requesting a form of consent

to operation to be obtained by a physician (1) Where the patient is over age, (2) where the patient is an infant

Inquiry from a physician on behalf of a hospital staff with regard to the existing laws and regulations concerning donors for blood transfusions, with especial regard to procedure in an emergency case

Inquiry from the Secretary of Medical Board of a hospital regarding hospital records, including the following specific inquiries (1) What is the right of the Courts to subpoena records? (2) What are the rights of the Court or Judge to hold in Court or unpound hospital records until the completion of a trial

Inquiry as to the civil and criminal liability of a physician arising out of an operation for the sterilization of a patient

Inquiry from the secretary of a component County Society requesting advice on the following matters (1) In the absence of the employment by contract or otherwise of a physician or physicians, and a surgeon or surgeons and other specialists to care for all welfare cases arising in the city, has the city or its Welfare Department the legal right to select, designate and publish a specific list of physicians, surgeons and other specialists to do the Medical Welfare work arising within the city, thereby discriminating against other physicians who are equally capable? (2) Is there any provision in the Public Welfare Law, or any ruling to the effect, by means of which the patient may choose the physician whom he wishes to care for him?

Inquiry as to the legal responsibility of a doctor for the acts of an anesthetist in the following cases (1) In cases where a physician anesthetist is used, (2) in cases where a nurse anesthetist is used

Communication requesting the following information and opinion (1) Legal definition of the practice of medicine, laws pertaining to use of X ray apparatus to make radiographs of human bodies, to the reading or interpreting of such films and to the treatment of patients by X rays (2) Is an interpretation of an X ray film of the human body a special privilege reserved for physicians only? (3) What decisions in law have been rendered pertaining to uses of X ray apparatus, interpretations, diagnosis and treatment?

Communication from a County Society requesting an opinion regarding the deduction for income tax purposes of the money received from the school district by a duly appointed Medical Examiner

Communication from a physician as to coverage under group policy for acts of assistant

Inquiry as to advisability of enforcing collection of bill for professional services where malpractice suit is threatened

In addition to the foregoing your Counsel has been asked to render advice and consider the following

Communications requesting citation of cases discussed in editorials appearing in the New York State Journal of Medicine

Communications requesting information as to when the Statute of Limitations runs in a malpractice action where the patient is a minor

Communication requesting a form of consent

to operation to be obtained by a hospital to cover the following cases

#### Ward Cases

- |              |   |
|--------------|---|
| 1 For adults | In general operative work<br>In mutilating operations |
| 2 For minors | In general operative work<br>In mutilating operations |

#### Private Cases

- |              |   |
|--------------|---|
| 1 For adults | In general operative work<br>In mutilating operations |
| 2 For minors | In general operative work<br>In mutilating operations |

Inquiry as to whether or not an examiner in lunacy who is sued for malpractice, is covered by the group policy

Communication from physician requesting further information as to a ruling in the Surrogate's Court dealing with the question of when, in legal contemplation a child is considered as living Said ruling having been the basis of an editorial in the New York State Journal of Medicine

Inquiry from a physician seeking information as to the availability of published reports of medicolegal cases

Communication requesting legal authorities on the question that arises where a doctor sues for his fee on an implied contract

Inquiry from a physician requesting the provisions of the Civil Practice Act covering the question of Confidential Communications

Opinion rendered to the Executive Committee in the matter of a protest by a doctor against the assessment levied by a County Medical Society upon its members for the current year and his contention that this assessment should be the subject of review by the Medical Society of the State of New York

Appearance as Counsel to the Board of Censors of the Medical Society of the State of New York in connection with an appeal taken by a member of one of the component County Societies

Your Counsel has been in conference and consultation with members of the Journal Management Committee and also prepared the existing contracts entered into at the time of the change of management of the STATE JOURNAL

Your Counsel has also rendered his assistance to this Committee in the matter of the applicability of the New York State Sales Tax to the New York State Journal of Medicine, and to other matters which have come before them for review

Your Counsel has also examined the proposed revised Constitution and By Laws of a number of County Societies and has rendered advice and made suggestions in connection therewith

Your Counsel has also advised and consulted with the Medical Economics Committee of the State Society from time to time with respect to various matters under its consideration

Your Counsel acted as one of the Counsel to the Joint Committee of the

State Society and the Academy of Medicine in connection with the proposed changes of the Workmen's Compensation Law. This Committee held a large number of hearings and your Counsel advised and conferred not only with the Committee but with various sub-committees and from time to time prepared various amendments and gave legal advice on the matters that came before the Committee for action.

Your Counsel has also advised from time to time with the Chairmen or members of other Committees of the State Society.

#### LEGISLATIVE ADVICE AND ACTIVITIES

Your Counsel's opinion has been requested and has been promptly given with respect to a number of proposed bills that

have come before the Legislature affecting the Medical Profession.

He has also drafted or assisted in the drafting of a number of bills to be introduced at this session of the Legislature.

#### CONCLUSION

We cannot close this report without expressing our thanks to the many members of your Society who have aided us in the defense of malpractice actions. Without this assistance so generously given, we could not have obtained the results shown by this report.

Respectfully submitted,

LORENZ J. BROSNAN, *Counsel*.

February 28, 1934

### REPORT OF THE FIRST DISTRICT BRANCH

*To the House of Delegates:*

Gentlemen:

A meeting of the Executive Committee composed of the Presidents of the counties of the Branch was held at the Vassar Alumnae House, Poughkeepsie, on May 19, 1933. At this meeting an invitation from the Westchester County Medical Society was accepted to hold the Annual Meeting at the Grasslands Hospital, Valhalla.

The program to be on Cardiac Arrhythmias and Collapse Therapy in Tuberculosis, together with an Operative Clinic and Case Demonstration in Chest Surgery.

In accordance with this invitation the Annual Meeting was held at Grasslands Hospital on October 11, 1933, with an attendance of one hundred and ninety-one and the following scientific program was presented:

Address of Welcome, Andrew A. Eggston, M.D., President, Medical Society of the County of Westchester.

"Cardiac Arrhythmias," James F. Rooney, M.D. Discussed by Milton J. Raisbeck, M.D.

"The Use of Quinidine Sulphate in Cardiac Arrhythmias," Frederic C. Conway, M.D. Discussed by Frederick W. Holcomb, M.D.

"Operative Clinics and Case Demonstrations in Chest Surgery," George C. Adie, M.D., Director Surgery, Grasslands Hospital.

"Motion Pictures Illustrating Normal and Abnormal Cardiac Mechanism and Electrocardiograph," Lewis M. Hurxthal, M.D.

"Pulmonary Tuberculosis," Howard Lilienthal, M.D.

"Tuberculosis Cases Under Collapse Therapy," J. Burns Amberson, M.D. Discussed by the members of the staff of Grasslands Hospital.

"State Society Problems," were discussed by Frederick H. Flaherty, M.D., President, and Daniel S. Dougherty, M.D., Secretary of the Medical Society of the State of New York, Orrin S. Wightman, M.D., Editor of the NEW YORK STATE JOURNAL OF MEDICINE.

I wish to take this opportunity to thank the members of the First District for their attendance. Also the officers and members of the Westchester County Society, together with Dr. Claude W. Munger and his staff at Grasslands Hospital, Drs. Rooney, Conway, Raisbeck, Holcomb, Hurxthal, Lilienthal and Amberson, together with Dr. Joseph S. Lawrence, Executive Officer, State Society and Mr. James Bryan, Executive Secretary, Westchester County Society for their participation and cooperation in making this annual meeting a success.

Respectfully submitted,

C. KNIGHT DEVO, *President*.

April 1, 1934



## REPORT OF THE THIRD DISTRICT BRANCH

*To the House of Delegates:*

Gentlemen:

The Third District Branch, which includes the Counties of Albany, Columbia, Greene, Rensselaer, Schoharie, Sullivan and Ulster—a rural district—submits for your consideration some features of unusual interest to your official body and the medical profession of the State at large:

Albany County Medical Society, with the interested cooperation of the municipal officials of the City of Albany, have been carrying on an intensive program of instruction and information of both the medical profession and the laity in an endeavor to return to the family physician the supervision and administration of those health measures related to vaccinations, immunizations, pre-school physical examinations and the T. B. testing of school children of early high school age.

At Catskill in Greene County there was opened last August a County Hospital. It was made possible by financial assistance from the State Department of Health. The Hospital was quickly filled to capacity and has been functioning smoothly and efficiently. The staff is composed of all licensed physicians within the County. The consulting staff is composed of physicians of eminence within easy access. Through the cooperation of the State Department of Health, the Medical Board obtained the right to select its own officers.

Columbia County is one of the few in this State which has established a County Health Department, abolishing all town and city health officers. The board of managers is appointed by the Supervisors of the County. A working majority of the board of managers is composed of physicians who are chosen from a list submitted to the Supervisors by the County Medical Society.

The County Health Department has been functioning efficiently since March, 1933, actively supervising the health and sanitation of the county water supplies, dairies, milk distribution and school health matters, among its many duties.

It has been acceptably received by the medical profession and laity of the County.

A few minor points of friction have arisen, usually of ethics, which the board of managers has quickly corrected.

The State Department of Health has not influenced the appointment of the personnel, nor has it been otherwise meddlesome but has been helpful in giving advice and guidance when sought.

Some of the County Societies in the Third District Branch have availed themselves of one or more of the postgraduate courses offered by the Committee on Public Health and Medical Education of the Medical Society of the State of New York. These courses have been enthusiastically received. Attendance, in some instances, has not been what would seem to have been merited, probably due to the hour of meeting not having been well chosen for the particular county or time of year. These rural counties are hopeful that this activity of the State Society will be continued.

In one instance at least—a county society which, in response to the request of the Governor of the State, submitted in good faith to the board of supervisors, a list of nominations for commissionerships under the Alcoholic Beverage Control Law—regrets that such a list had been submitted. It would seem that this is a questionable function to be exercised by a County Medical Society.

Our rural district is deeply concerned and trust that they will not be deprived of supervised and restricted administration of anesthetics by qualified nurses. Also that some method may be arrived at to lessen the very large economic loss to institutions, the medical and nursing professions which is incurred by the irresponsible injured—largely the result of automobile accidents which are so prevalent in rural areas.

Respectfully submitted,

CLARK G. ROSSMAN, *President.*

April 1, 1934

## REPORT OF FOURTH DISTRICT

*To the House of Delegates:*

Gentlemen:

The Annual Meeting of the Fourth District Branch was held at Malone, Sept. 19

and 20, 1933. Although more than one-half of our members in the Branch live over two hundred miles from Malone, about one hundred and twenty attended the

meetings. Several guests were present from nearby Canadian towns and also from Vermont and Massachusetts.

The Scientific Program on the afternoon of the 19th included:

"Fractures and Dislocations of the Elbow," by Dr. Philip W. Wilson of Boston.

"What the State of New York Plans to Do at Saratoga Springs," by Dr. Carl R. Comstock of Saratoga Springs.

"The Diagnosis and Management of Goiter," by Dr. Frank H. Lahey of Boston.

In the evening, members of the branch were guests of Franklin County Medical Society at dinner at Hotel Flanagan. The rest of the evening was given up to a discussion of economic problems. The speaker of the evening was Dr. John Wykoff, Dean of Bellevue Medical College, New York City and his topic "Some Thoughts on the Present Day Evolution of Medicine." He pointed out with very keen insight the great changes that are now taking place in the practice of medicine, the reasons for the change, and probable future developments. He was followed by Dr. Robert S. Macdonald of Plattsburg on "Why the County Should Compensate Physicians for the Care of County Cases," and by Dr. Edward J. Callahan who told us "How Saratoga County Medical Welfare Work Is Handled." Our State President Dr. Frederick H. Flaherty of Syracuse very ably summed up some of our Economic Problems and told us what the State Society is doing with them.

The morning session on the 20th was unusual in that the attendance was even

larger than that of the previous afternoon. A paper on his specialty by Dr. Gavin Miller, Demonstrator in Diseases of Rectum and Colon at McGill Medical School, was enthusiastically received. Dr. William Mallia of Schenectady presented a motion picture "The Management of Persistent Occiput Posterior in Labor." The session closed with a most practical and helpful paper on "The Diagnosis of Brain Tumors from the General Practitioner's Standpoint," by Dr. Wilder G. Penfield, Professor of Surgery of McGill Medical School in Montreal.

There has been much discussion among the County Societies during the past year about the indigent county cases and several of our Counties have agreements with the *County Welfare Officers whereby the profession is paid for its services.*

At the September Meeting an Economic Committee for the Branch was appointed, consisting of the County Presidents, the County Economic Chairmen and another representative surgeon or medical man from each county society.

This Committee met in Elizabethtown in October and prepared a schedule of fees which seemed fair to both County and the professions. It is hoped that this schedule will be adopted in the Counties of the Branch thus eliminating constant friction within the county between the Profession and the Welfare Officers and eliminating the sending of county cases from one county to an adjoining county where the schedule of fees is lower.

Respectfully submitted,

R. G. PERKINS, *President*

April 1, 1934

## REPORT OF THE FIFTH DISTRICT BRANCH

*To the House of Delegates:*

Gentlemen:

The chief activity of the Fifth District Branch during the past year was its twenty-seventh annual meeting at Oswego in the high school auditorium. There were one hundred and ten members present at the meeting, representing the Counties of Herkimer, Jefferson, Lewis, Madison, Oneida, Onondaga and Oswego. The scientific program was as follows:

"The Treatment of Hernia by the Use of Fascia; and More Especially Human

Preserved Fascia," Harry W. Vickers, M.D., Little Falls.

"The Results of Biliary Tract Surgery," Allen O. Whipple, M.D., Professor of Surgery, Columbia University.

"The Management of Uterine Bleeding," Thomas P. Farmer, M.D., Syracuse.

"Present-day Conceptions of Puerperal Sepsis," Benjamin P. Watson, M.D., Professor of Obstetrics and Gynecology, Columbia University.

"Facts Concerning the Temporary Emergency Relief Administration," James N. Vander Veer, M.D., Albany.

Each of these papers was followed by interesting discussions by various men and each paper was declared to be of distinct value to the members in their various lines of practice. In addition to this program, Dr. F. H. Flaherty, President of the Medical Society of the State of New York, spoke and emphasized problems now before the doctors of the State, discussing especially the medical relief plans in this State.

Dr. Thomas P. Farmer, Chairman of the Committee on Public Health and Medical Education of the State Society, discussed some of the public health problems with which the physicians of New York have to

deal, and described the graduate courses conducted by the State Society.

At the election of officers, the following men were elected:

*President:* William A. Groat, Syracuse.

*First Vice-President:* LeRoy F. Hollis, Lacona.

*Second Vice-President:* M. M. Gardner, Watertown.

*Secretary:* Fred C. Sabin, Little Falls.

*Treasurer:* Hermann G. Gerner, Canastota.

Respectfully submitted,

EDWARD R. EVANS, *President.*

April 1, 1934.

### REPORT OF THE SIXTH DISTRICT BRANCH

*To the House of Delegates:*

Gentlemen:

Nothing unusual has happened in the history of the Sixth District Branch during the past year. A report of the annual meeting held in Norwich on October 18, 1933, has already appeared in the JOURNAL. The October date was about three weeks later than this District's meetings have been held in the past. Comment in general was favorable to the change. The Counties have held their meetings regularly. In the field of economics this District has not been in so bad a situation as many others have

been reported to have been. Many of us think, however, that the social and economic aspects of medical practice are undergoing permanent change, very doubtfully for the better.

It has been a pleasure and a privilege to serve the District for two years. To the signer of this report has come doubts during his time of office of the real value of District Branch organization in the State Society.

Respectfully submitted,

STUART B. BLAKELY, *President.*

April 1, 1934

### REPORT OF THE SEVENTH DISTRICT BRANCH

*To the House of Delegates:*

Gentlemen:

The Twenty-Seventh Annual Meeting of the Seventh District Branch of the Medical Society of the State of New York, was held on Thursday, September 21, 1933, in the College Auditorium on the River Campus of the University of Rochester. The registered attendance was 251.

The morning session was opened at 10:30 o'clock by the President, Dr. James M. Flynn, who introduced Hon. Charles Owen, Comptroller of the City of Rochester. Mr. Owen welcomed the physicians and referred to the aid which they render in prolonging the years of usefulness of those long experienced in the practical affairs of business and civic life.

The following officers were elected at the business session: President, Alfred K. Bates, Auburn; First Vice-President, Thomas W. Maloney, Geneva; Second

Vice-President, Alfred W. Armstrong, Canandaigua; Secretary, H. S. Brasted, Hornell; Treasurer, E. T. Wentworth, Rochester.

A noon luncheon was served in the students' dining hall of the University.

The State Institute for Malignant Disease sponsored an exhibit of photographs and x-ray films illustrating its cancer research.

Dr. F. H. Flaherty, President of the Medical Society of the State of New York, gave a brief address urging the officers of the County Medical Societies to confer with their county welfare officials in order to reach agreements in regard to supplying medical service to the poor and those who cannot otherwise obtain it. Securing these agreements is of extreme importance to every County Society.

Five scientific addresses were listed, all of deep interest and great practical value.

Dr. Royd R. Sayers, Chief of the Industrial Hygiene and Sanitation of the United States Public Health Service, discussed the subject of silicosis, and the deleterious effects of silica dusts compared with the effects of other dusts. The specific effects of silica are the results of its solubility. Carbon, for example, is insoluble, and is therefore not toxic, although it may blacken the lungs with its deposits. But silica is slightly soluble, and has toxic properties in addition to the irritation of its mechanical presence in the tissues. Silica produces a characteristic fibrosis, and predisposes to tuberculosis.

Dr. Charles Gordon Heyd gave a talk, illustrated with lantern slides, on the subject: "The Mechanism and Clinical Interpretation of Jaundice." Dr. Heyd reviewed the source of the bile salts in the blood and the several mechanisms by which they are retained or deposited in the tissues. The practical application of his address was a plea that doctors should bear in mind the physiology of jaundice and the various conditions that bring it about, such as vomiting leading to alkalosis, and diarrhea leading to acidosis—contrasting conditions which respond to appropriate treatment.

Dr. Byrl R. Kirklin, of the Mayo Clinic, Rochester, Minnesota, gave an address on "The Diagnosis of Pulmonary Tuberculosis," with special reference to the peculiar field of the x-ray.

Dr. Arthur J. Bedell, of Albany, gave a talk on "Medical Ophthalmoscopy, the Connecting Link Between the Physician and the Specialist." Dr. Bedell showed photographs of the fundus of the eye in various diseases, using three stereopticons loaned by the Bausch and Lomb Company, and throwing three pictures on the screen simultaneously, in order to show contrasting conditions. He showed how the eye fundus may reveal conditions in their early

stages while they are remediable. His talk was an argument for the use of the ophthalmoscope in two conditions:

1. In visual defects which are of rapid onset, often revealing kidney disease, lead poisoning, syphilis, or other serious condition.

2. In these same systematic conditions often revealing an eye disease in an early stage.

Dr. Fred H. Albee, of New York, spoke on "The Bacteriophage in Wound Treatment," tracing the history of the greater developments in the treatment of chronic infections of wounds through three stages:

1. The Carrell-Dakin method of irrigation used in the World War.

2. The Orr method, or packing the wound in gauze impregnated with vaseline and leaving the material intact for days or weeks.

3. The application of bacteriophages to the wound.

The first method depended on the constant application of an antiseptic to the wound and bacteria. The probable explanation of the second method was that long presence of the packing in the wound permitted bacteriophages to grow in the wound.

Bacteriophages were first discovered in 1915, and about fifty varieties are known, each specific for a single kind of germ. Doctor Albee's method of using them is to fill a wound cavity with a soft mixture of paraffin and vaselin, and to introduce the bacteriophages into the wound daily through a catheter.

A time schedule was followed, and every speaker began and ended on time.

Respectfully submitted,

JAMES M. FLYNN, *President.*

April 1, 1934.

## REPORT OF THE EIGHTH DISTRICT BRANCH

*To the House of Delegates:*

Gentlemen:

The twenty-eighth annual meeting was held on Thursday, October 5, 1933, at the Cataract House, Niagara Falls, N. Y. Due to the deaths of Dr. Raymond B. Morris, President, and Dr. Frederick J. Schnell, Vice-President, the meeting was called to order by Dr. H. Wolcott Ingham, of Jamestown, the second Vice-President.

A resolution commending President Franklin D. Roosevelt for the address which he made to the convention of the American Legion October 2, 1933, and pledging the support of the physicians in each community to aid him by continuing to care for those who require medical treatment and are unable to pay for it, was adopted.

At the luncheon hour Dr. Frederick H. Flaherty, President of the Medical Society

of the State of New York, and Dr. Thomas P. Farmer, Chairman of the Committee on Public Health and Medical Education, emphasized the need that county medical societies enter into agreements with County Welfare officers in regard to supplying medical services to the poor.

The following officers were elected:

*President:* Dr. Richard Sherwood, Niagara Falls.

*First Vice-President:* Dr. H. Wolcott Ingham, Jamestown.

*Second Vice-President:* Dr. Herbert Smith, Buffalo.

*Secretary:* Dr. Henry W. Spofford, Batavia.

*Treasurer:* Dr. Fitch H. Van Orsdale, Belmont.

A scientific program was carried out as follows:

"Timely Economic Issues," Charles H. Goodrich, M.D., Brooklyn.

"A study of Diabetic Deaths from Autopsies," Ivan Hekimian, M.D., Buffalo, and Samuel A. Vogel, M.D., Buffalo. Discussion opened by Byron D. Bowen, M.D., Buffalo.

"What Every Doctor and Dentist Should Know about Cancer," Joseph C. Bloodgood, M.D., Baltimore, Md.

"Advances in Cancer Research, in relation to enzymes in cancer and research in the mechanism of radiation effects," Ellice McDonald, M.D., Philadelphia, Pa.

The Eighth District Branch had a very difficult year due to the death of Dr. Raymond B. Morris of Olean, N. Y., our worthy President who died September 16, 1933, after a long-continued illness. We also had the misfortune to lose another very good man, Dr. Frederick J. Schnell of North Tonawanda who was First Vice-President of our district. He died May 5, 1933. Resolutions were adopted in the honor of these deceased officers.

The Eighth District Branch is composed of eight county societies in the extreme western end of the State, whose membership is as follows:

Allegany .....	34
Cattaraugus .....	47
Chautauqua .....	87
Eric .....	786
Genesee .....	27
Niagara .....	102
Orleans .....	22
Wyoming .....	33
	<hr/> 1,088

Respectfully submitted,

H. W. INGHAM, *Acting President.*

April 1, 1934

## INDEX OF ANNUAL REPORTS, 1934

Arrangements, Committee .....	351
Censors, Board of .....	360
Council .....	335
Counsel .....	361
District Branches .....	366
Legislation, Committee .....	341
Medical Economics, Committee .....	346
Medical Research, Committee .....	357
President .....	331
Public Health and Medical Education, Committee..	342
Public Relations, Committee .....	351
Scientific Work, Committee .....	339
Secretary .....	334
Treasurer .....	358
Trustees .....	360

## Medical Society of the State of New York

### HOUSE OF DELEGATES

The regular Annual Meeting of the House of Delegates of the Medical Society of the State of New York will be held on Monday morning, May 14, 1934, at 10:00 A.M., Daylight Saving Time, in the Ball Room of the Hotel Utica, Utica.

SAMUEL J. KOPETZKY, *Speaker*,  
DANIEL S. DOUGHERTY, *Secretary*.

### ANNUAL MEETING

The Annual Meeting of the Medical Society of the State of New York will be held on Tuesday, May 15, 1934, at 7:00 P.M., in the Ball Room of the Hotel Utica, Utica.

FREDERICK H. FLAHERTY, *President*,  
DANIEL S. DOUGHERTY, *Secretary*.

### REGISTRATION

#### *For Members*

Registration for members will be held at the Hotel Martin on Monday, Tuesday and Wednesday, May 14, 15, and 16, 9:00 A.M. to 6:00 P.M.

#### *For Delegates*

Registration for members of the House of Delegates will be held in the Hotel Utica, Monday morning, May 14th, from 9:00 A.M.

### TECHNICAL EXHIBITS

The Technical Exhibits will be located in the Hotel Martin, and will be open on Monday, Tuesday, and Wednesday.

### VALIDATION OF RAILROAD TICKETS

Members holding railroad certificates entitling them to a reduction in return railroad fare must have same signed and

validated at the Society's Registration Desk before purchasing tickets for the return trip at the reduced fare.

### 128TH ANNUAL MEETING

Calling the Society to order by the President, Frederick H. Flaherty, M.D.

Address of Welcome by the Chairman of the Committee on Arrangements, Andrew Sloan, M.D.

Reading of the Minutes of the 127th Annual Meeting by the Secretary, Daniel S. Dougherty, M.D.

Address of Welcome by Samuel Sloan, Mayor of the City of Utica.

President's Address, Frederick H. Flaherty, M.D.

### ANNUAL BANQUET

The Annual Banquet will be held in the Hotel Utica, Tuesday, May 15, 1934, at 7:00 P.M.

Introduction of the President-Elect, Arthur J. Bedell, M.D.

Address: Dean Lewis, M.D., President of the American Medical Association.

Entertainment: "The Late Christopher Bean," presented by The Players Club, Utica, at the Players Theater.

Tickets for the banquet including the entertainment will be \$2.00, and members are requested to secure their reservations at an early date from Dr. William Hale, Jr., 264 Genesee Street, Utica.

### DELEGATES' DINNER

A dinner for the delegates will be served in the Hotel Utica on Monday Evening, May 14, following the adjournment of the afternoon session of the House of Delegates. Tickets \$1.50.

# NEW YORK STATE JOURNAL OF MEDICINE

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## EDITORIALS

### Defeatism

Subtle as smoke, insidious as vice, invidious as evil, festering as the plague, fearful as the knees of a coward, self-seeking as a politician, promising as the eyes of a coquette are the advocates of defeatism who again rear the Medusa of propaganda for the socialization of medicine.

Again is heard, ever more loudly, the voice of the false prophets crying: "It is inevitable—we must surrender or be lost—there is no standing against it—the odds are too great—the foundations with all their riches and influence are for it—the politicians are for it—the people have been taught to demand it—it must come—let us make terms—any terms before it is too late; before we are overwhelmed; before we succumb."

Thus the Caillaux' and Bolo Pachas of medicine to-day! Those of France in 1917 caused mutiny in the army, disorganization in the Government, despair in the people—almost the loss of the war. For what? For the money of the enemy of France! And until when? Until there arose to power one strong, brave and ruthless man who reanimated the Army and the Nation with truth, with courage, with steadfastness, and with faith.

Medicine in the United States needs a Clemenceau. Can it find one?

### "Alice in Wonderland"

One of the major fallacies of the "brain trusters" of the medical foundations is the naive assumption that by legislative enactment the entire population can be regimented for medical and health purposes. There is no substantial evidence, either in history or current experience, that the entire population at any time and under any circumstances can be made to interest themselves in their health or their physical disabilities. It is a sad but recurrent experience for the attending physicians at hospitals to find gross medical conditions utterly neglected when the individual is in active contact with expert medical service and which is provided free of charge. Residents within one hundred yards of a hospital live for years without taking the trouble of walking next door in order to have their medical conditions analyzed and appraised. The recent activity of the Milbank Memorial Fund is suggestive of the superiority complex that seems to be permanently a part of the mental equipment of their personnel. On March 14, under the roof of the New York Academy of Medicine, the technical advisors, friends, well-wishers, curiosity seekers, and self-appointed tycoons of medical charity assembled and after round-table discussion came out with what was alleged to be a completely worked out plan for distributing medical service by means of compulsory health insurance. In the metropolitan dailies on Thursday, March 15, appeared an equivocal report of these round-table discussions, and an eager and alert public was allowed to survey Alice in Wonderland, looking through the mirror, at her socialized medical offspring.

The first ponderous suggestion from the self-anointed leaders of the medical revolution was that the provision of good medical care to all of the population is essential to the nation's well-being. It would be interesting to view the medical Columbus that discovered this fact. In like vein, quality of medical care should not be sacrificed to economy and cost, and those who render

medical care should be adequately remunerated. It was then proposed to set up an organization of a State Department of Medical Care; and then, like the spreading yew tree, this organization was to embrace a Board of Medical Care, Commissioner of Medical Care, Advisory Board, Deputy Commissioner, Judicial Counsel, Departments of Education, Investigation, Administration, Professional Supervision, and Finance. It is interesting, as a diversion, to note that in the pictorial representation of this scheme "finance" occupies the smallest allotment of space. There would be thus set up a bureaucracy for New York State, located at Albany, and with a complete regimentation of the physicians of this State, subject to local medical council and control boards. This grandiose scheme was to be financed by a compulsory system of group payment, for the "round tablers" in Paragraph 16 of their protocol stated "group payment for medical care should be grounded on the compulsory basis."

It was alleged that the entire cost of this compulsory health insurance would only be about seven dollars in addition to the annual per capita cost of medical service as set forth by the Committee on the Costs of Medical Care. The increment of seven dollars would hardly pay for the secretaries that would be required to acknowledge the complaints that would pour in on the central office from an outraged citizenry.

When the Committee on the Costs of Medical Care was spending its hundreds of thousands of dollars and acquiring such an accumulation of reports of doubtful authenticity, they failed to survey the most outstanding example of one of the forms of compulsory medical care. The Committee completely dodged the problem of workmen's compensation which had reached such a state of racketeering, corruption, division of fees, fake bills, fake conditions, that it was a menace to the public. The same Committee passed over contract practice which is probably the second largest item in the social application of medical practice to the community. It spent very little time on the known defects of health insurance in European countries. Nor did it take into its consciousness the

historical fact that when the remuneration in any given line of human activity passes below a decent standard of living the quality of that service deteriorates beyond measure. The same Committee was partial to the groups that it selected for a survey of group practice, and student health service was almost omitted. After the Report of the Committee on the Costs of Medical Care had died of inanition, a group of the self-same well-wishers canvassed the State and sought to make contacts with the various local clubs and Chambers of Commerce for the purpose of propagandizing for the revivification of the Report. To-day we see a recrudescence of the same impulse. A critical observer might question why the funds of the Milbank Memorial Fund are being expended in propaganda for an entirely new system of medical practice. Why the present system is literally to be "junked." Why no thought is given to the present financial difficulties of our hospital system and of our charity. Furthermore, the same observers might suggest that the Legislature of the State of New York should investigate the source of the funds of the various medical foundations and where these foundations are carrying on a banking business they should be subjected to the same taxation as applies to similar institutions engaged in like activities. It might satisfy public curiosity to know the primary source of the funds of some of the foundations and whether they are derived from monopolistic business practices.

We reluctantly come to the conclusion that the best interest of the citizens of this State would be served by a searching investigation as to the activities of all foundations which seek to mold or influence public opinion by propaganda. It is a tremendous responsibility for any self-constituted group of social reformers, a group of paid theorists set out to create a medical utopia, to set out to destroy what is a going concern which, with all of its disabilities, has functioned in the main adequately and effectively, or to destroy a system that has made such splendid contributions to the health and well-being of the citizens of New York State. What grandeur! What courage! "Grandeur,"



said Pangloss, Professor of Metaphysico-theologico-cosmologico-nigology, "is extremely dangerous!"

### Denmark Conquers Syphilis

A notable milestone in medical progress is reached when any nation can record the fact that it has driven from its borders a disease that has plagued the race as terribly as has syphilis. A bulletin issued by the U. S. Public Health Service contains an article abstracted from a French medical journal entitled "The Virtual Disappearance of Syphilis in Denmark." The fight has lasted nearly a century and a half. Free treatment began in 1790, treatment was made compulsory in 1874, and free treatment became compulsory in 1906. These regulations have reduced the cases to a minimum, and most of the ones now seen come from abroad.

The measures are administered in such a way that no one can reasonably object to them. The patient can select his own physician and place of treatment, but treatment he must have. Infection of any other person is visited with heavy penalties. The practicing physician informs the patient of these regulations, and if he refuses treatment after two warnings, he is reported to the sanitary police. He then becomes a number in the police files, so that the filing clerks do not know the names of the patients. The filing system is so complete that a case can be followed up for years, with all details of treatment and results. All patients, high or low, rich or poor, male or female, of character good or bad, are subject to the same regulations. An effort is made to have the patients return for tests for several years after treatment, and the majority make no objection. The compulsory feature of the law is seldom necessary.

How far this plan would go in other and larger countries is, of course, an open question. Its success in Denmark, however, commands our notice. It is a plan that could be tried in a city, a county, a state, and, if successful, could be expanded to any larger territory as desired. It was Hamlet who remarked that there was "something rotten in the state of Den-

mark." If he were alive today, he would find that in one respect, at least, conditions are better.

### Telephone Charge Adjustments

As a result of the editorial which appeared in the JOURNAL under date of February 15, we have been literally swamped with letters and telephone calls from members requesting that we handle adjustments and refunds on their telephone charges. Unfortunately our staff is not large enough to permit our rendering this service, much as we would like to do so. In the meantime we have also learned that there are several small independent telephone companies operating in various sections of the State of New York under rates somewhat different from those of the New York Telephone Company, and these particular companies do not extend the residential telephone rate to physicians who have their offices combined with their residences.

This editorial was instrumental in securing adjustments and refunds for several hundred, if not thousands, of doctors.

### The Revised Food and Drug Bill

It is refreshing to find the Tugwell-Copeland Food and Drug Bill reported out of the Commerce Committee to the Senate with a full set of teeth still in it, and in good sharp condition, too, in spite of all efforts to file them down. Some alarm was felt by friends of the measure when the newspapers told of the organization of a committee of manufacturers to oppose it as "dangerous and un-American" because it gave the Department of Agriculture "bureaucratic control" over the food, drug, and cosmetic business. The only result of this opposition is the provision in the revised bill for an advisory committee with two of the seven members appointed from the food, drug, and cosmetic industries to consult with the Secretary of Agriculture in enforcing the law. Another change is the elimination of the list of thirty-four diseases prohibited in advertising by the original bill. "I never was keen myself about the section which listed all the

diseases," remarks Dr. Copeland. Other changes are of a minor nature dealing mainly with administration.

The chief object of the new bill is to plug the gaping holes in the old measure which permitted flagrant abuses. Take it by and large, it merely makes the manufacturers of foods, drugs, and cosmetics observe common honesty. It protects the public health against ineffective or downright harmful nostrums, and it protects their pocketbooks against paying \$1.50, for example, for 45 cents worth of horse laxative, or Glauber's salts, marketed under a fancy name. Honest manufacturers, too, are protected against the tricksters and shysters who would ruin their business by lying and fraudulent competition, and, it would seem clear to most people that they should lend their support to the bill, instead of organizing to oppose it.

Another advisory body is to be a Committee on Public Health, appointed by the President with a view to their distinguished scientific attainments and interest in public health. No member of the Department of Agriculture or anyone financially interested in the three industries affected, will be eligible to it. The medical profession is again recognized in the provision that a drug shall be deemed to be misbranded if representations on its label or in its advertising concerning its effect are not supported by "substantial medical opinion" or by demonstrable scientific facts. Honest differences of opinion may exist, but the Committee explains that the expression "substantial medical opinion" is "intended to mean contemporary opinion shared by some numerically significant group, including recognized experts in the field in question." Practitioners employed for the occasion by the unscrupulous are not considered to be in this category.

Just now, when advertisements of remedies for colds stare us in the face at every turn, it is especially interesting to notice that the bill provides that any medicine that is merely a palliative must bear a statement that it is a palliative, and tell how the palliation is effected. The Committee in its report remarks very truly that many consumers take the expression "for the relief of colds" to mean that the article is an

effective treatment for the disease itself. If the drug merely dulls the pain, reduces fever, or lessens congestion of the nose or throat, the user has a right to know it, so that he can take care of the diseased condition more intelligently and effectively, and not rely on a palliative.

Then, too, drugs containing habit-forming narcotic and hypnotic substances must have a label stating the amount and bearing the legend, "Warning—may be habit-forming." Under the present act merely the quantity has to be stated. This has proved to be not enough. Persons using such remedies regularly have become drug addicts. Now they are to be warned.

Common drugs sold under fancy labels and fancy names (at fancy prices) must carry the common name along with the other, so that the well-known practice of selling bicarbonate of soda or sulphur and molasses under some highfalutin title will have the mask torn off, at any rate. People who still insist on being fooled will have no excuse.

The bill goes even to the point of protecting people who may ignorantly take a good remedy in a wrong way. Some drugs are just as potent for harm as for good. Thus a patient with asthma may take a potassium iodide preparation to relieve his paroxysms, but if he has an arrested case of tuberculosis, the drug may render it dangerously active. Again, the last doses of a bottle of worm medicine given without shaking before each dose may be fatal to children because the potent principles settle out on standing. So the bill stipulates that a drug liable to such misuse must bear warnings on its label to prevent it.

The section dealing with cosmetics is a much needed addition to the present law, which has nothing on this important subject. Serious harm to health, and such injuries, indeed, as blindness and paralysis, have been caused by various hair dyes, eye-lash and eye-brow dyes, complexion bleaches, and depilatories. The mischief is due to toxic ingredients like certain coal-tar dyes and such metals as lead, arsenic, mercury, and thallium. The bill guards the public against further injury.

Only a short time remains before the close of this session of Congress. If the

editorial selection has swung far over to the original article whose title indicates a definite subject and whose reasoning is largely deductive. The detailed presentation of the individual case has largely disappeared. To be sure many articles are based on experience with groups of cases but the histories are often either left out or placed in subordinate type that many readers may "skip" without losing the continuity of the main theme advanced by the author.

Without for a moment suggesting that the present customs are unwise, or that editorial advice has not created a vast improvement in medical literature, the *Journal* believes that in all probability much material of true worth may be now encysted because unwelcome, in the files of many physicians. A carefully considered single case, intelligently presented, has values. It may inspire inductive thinking and may also, often, solve instantaneously a puzzle in the mind of a practitioner, be he a specialist or general family physician, who is confronted with a doubtful case. It can also provide later students of literature with additional authoritative data in their studies of special subjects.

To be acceptable for publication, such reports must, of course, pass a very strict censorship, and thus the Management Committee will provide. Unusual interest, proper work-up, well chosen language, and brevity are essential. Authors should expect what might seem harsh treatment in order that actual publication may fulfill the objects that are sought.

Dr S. S. Goldwater, Commissioner of Hospitals, New York City, announces that economies and reorganizations, still only partly completed, have enabled him to wipe out the \$552,706 deficit that was facing his department for this year. Besides this, the Commissioner declared, he has brought to an end the political influence which for years has been part of the hospital system. Many of the unneeded employees were put to work originally by order of district leaders, he indicated.

#### AMERICAN HEART ASSOCIATION

The American Heart Association will hold its Tenth Scientific Session on Tuesday, June 12, 1934, from 9 30 A.M. to 5 30 P.M., at the Cleveland Hotel Cleveland Ohio. The Program will be devoted to Arteriosclerotic Heart Disease.

## Correspondence

*Anonymous letters will not be noticed. All communications must carry full name and address of the writer, but these are omitted on request.*

### To the Editor

Ex Mayor McKee in his address at the Academy of Medicine states that the cost of public service in New York City has 'in the last twenty years doubled and trebled itself' and 'slowly but surely the government is assuming more and more the work of the private physician.'

It may be well to remember that in the last twenty years the cost of everything else has doubled and tripled and that any municipality, state, or government that engages in the practice of medicine should not complain of the cost of it. Instead of this being an argument for the state control of medicine, it should be judged as a good reason why they should not do it and to simplify and control the public institutions so that only the indigent poor are cared for, this also being necessary for the voluntary institutions. The fetish of cities, counties, states, industries, insurance companies, funds, endowments, hospitals, clinics, etc., to practice medicine is reacting on them. They should have considered the cost before they went into it rather than going right on to the detriment of both themselves and the medical profession. Paternalism is good but carried too far does harm. What the whole subject now requires is a wise dictator, a broad minded economic individual or policy and either the former Roosevelt square or the present Roosevelt 'new' deal. The shoes are pinching but the feet in them are not those of physicians but those of laymen, politicians and organizations. In the meantime the members of the profession are glorious, charitable and kindly while avalanches of propaganda on the high cost of medicine and the like are being hurled at them as if they were the culprits and responsible for the difficulties. The sooner our and other countries wake up to the fact that physicians can handle the whole subject more wisely and fairly to all concerned the sooner it will be straightened out properly. The health of the people is a public matter but it should be left in economics and activities to where it belongs namely the medical profession. All we want is the wherewith in hospitals institutions charitable organizations, etc., to help along and they can depend upon the many centuries old traditions of the profession to take care of the essentials. We have been under a code for twenty four hundred years and we do not need a lot of opinions from nonmedical sources to make one for us. Let those not in the medical profession take care of their own codes, which they certainly are not doing very well with. When they have been at theirs a few years and harmony is established among them under it they then can get somewhat of an idea of how it feels to be butted into from the outside. If they do as well with theirs, which was politically imposed as we have done with ours, which was voluntarily imposed, we may be in frame of mind to listen. In kindness, tolerance and charity the medical profession are continuing their work, but there are a lot of people who have taken it upon themselves to run our job for us. It is not in the nature of the medical man to fight back. We are too priestly for that.

But it is in our nature to want to be left to our own work and not to be interfered with or deprived of our rights as medical men.

ANTHONY BASSLER, M.D.

#### To the Editor:

The vicissitudes of life have made the physician's place in society quite precarious of late. Among the many reasons for it, the ever increasing flood of patent "cure-alls" has become a problem of the first magnitude. It were all well and good if people who want to doctor themselves were left alone to use grandmother's herbs. At best they would have a good purge, at the worst they might cause themselves a little stomach ache. In either case that kind of medication would do little or no harm. However, serious consequences to the health of the public ensue sometimes when the use of patent medicines is substituted for simple self-medication. That did not deter the patent-medicine makers from expanding the market for proprietaries by relentless advertising over the head of the physician directly to the public, until the use of patent medicines has grown to such proportion that their manufacturers now hold fully 85 per cent of the business of treating the sick which most properly belongs to the physician.

There is no use for the physician to wrap himself up in his toga of pure knowledge and allow himself, like the Caesar of yore, to be stabbed by the rabble. There is no sense in his ignoring the patent-medicine menace as being far beneath his dignity. It will do no good for him to suffer in silence and wait until he will have to drive a taxicab for a living.

Why not put up a fight, may one suggest? There is, fortunately, a choice of weapons. And since so much is at stake, each should be used to the limit. The stern fiat of the law, which has always been on the side of the physician, should be invoked. The support of the public should be sought. It could be had for the asking, for the public is tired of being constantly fleeced and at times poisoned by some of those patent "cure-alls." Advertising should be used, too. Conducted properly, it will work marvels. It is a truism that the flaming truth of knowledge will easily send up in smoke the fraudulent advertisements of the patent-medicine makers. Besides, the physician ought to cease prescribing patents himself, a practice which supports those who seek to bring him down and keep him there. Moreover, the physician has a natural ally, and quite a formidable one, the pharmacist, who is just as rebellious against the patent-medicine makers as the physician is.

"Descend from your pedestal, doctor," I would say to the physician, "and throw off your toga. Roll up your sleeves and put up a man's fight for the things you so dearly paid for. Stop prescribing patent medicines at once. Dust off your good United States Pharmacopoeia and National Formulary, and use them, for Heaven's sake, use them! It is your only salvation. Ally yourself with the pharmacist and put your combined strength into the sacred war for your places in the scheme of things and for the business that rightfully belongs to each of you. Together you are invincible. Together you cannot fail."

E. M. LEVITE, Ph.G.

New York, N. Y.

## SPECIAL ARTICLE

### SPRING DIPHTHERIA IMMUNIZATION CAMPAIGN

THOMAS PARRAN, JR., M.D.

State Commissioner of Health, New York State Department of Health, Albany, N. Y.

A state-wide diphtheria immunization campaign will be carried on during the spring months of this year. Plans for such a campaign were discussed at a conference held in Albany on March 19 and attended by representatives of the various organizations who participated in the five-year campaign, including representatives of the State Medical Society. Slight increases in diphtheria prevalence, the low immunization status of certain localities, and the availability of extra nurses for house-to-house canvassing are among the reasons for embarking upon a special campaign at the present time.

#### DIPHTHERIA PREVALENCE

Both diphtheria cases and deaths increased slightly in number in New York State, exclusive of New York City, last year.

During 1933, 710 cases and 65 deaths were reported, as compared with 654 cases and 59 deaths in 1932. Of themselves, these slight increases have no particular significance, but in view of the fact that diphtheria cases and deaths failed to decline in 1933 for the first time in five years, they are worthy of notice.

Also disturbing is the occurrence of several small, but explosive diphtheria outbreaks since the beginning of 1933. The majority of these outbreaks have taken place in the western or southwestern part of the State, but their occurrence has not been limited to these sections. Places in Albany, Jefferson, and Westchester Counties have also been visited by diphtheria epidemics within the past twelve months. Although no single outbreak has reached

(Turn to page 384)

## Society News

### COMMITTEE ON ECONOMICS

#### A Study of Medicine in Industry

Medicine in industry has been obliged recently to submit to economic situations. In many industries medical work has been done away with completely, in others the employment has been part time, the number of hours being curtailed. As conditions have made it imperative in some industries the physician has disappeared completely and the emergency treatment of sickness and accident carried on without any real medical supervision, in some instances by the trained nurse and occasionally by the untrained nurse. By and large, medical service in industry has been maintained rather more generally than would have been expected 25 years ago. A quarter century past even a slight economic flurry would have been responsible for the entire elimination of the physician and the medical department from any except those industries carrying with them extraordinary hazards, and where the medical work was absolutely indispensable to the conduct of the business.

Under present conditions, there is a definite increase in the interest on the part of management in the methods for the safe operation of business. It is plain to be seen, that this consideration has now gone beyond the phases of the industry associated with its mechanization, and the characters of the processes and materials used. More time and consideration is being given to the general subject of working conditions including job allotment, light, heat, ventilation, hours, rest, recreation, etc. Management has been thinking more intensely along these lines as a natural outcome, of the depression, aside from scant work and scant wages, which would be manifest in the form of various bodily and mental conditions. It is felt, that medicine in industry to-day is more than ever concerned with the problems of prevention, particularly as exemplified by working conditions, and those phases of the life habits of employees suitable for and available of supervision.

As a result of contact with a number of industries, we feel that the company physician still continues to occupy his recently improved professional position, and to augment his already outstanding field in

industry. Management has been reasonably sympathetic in meeting the problems of the present day, both from the standpoint of medicine as practiced within industry, and with respect to the employee in his sickness, accident, and rehabilitation contacts with the outside medical profession. The physician in industry, while in practically all instances compensated inadequately, when viewed in terms of the return of the successfully practicing physician, nevertheless, under present conditions, has been accorded a more adequate security than the physician in general practice. As a general thing, the physicians in industry while having received pay cuts with the rest of industry has been accorded as much consideration as have members of other outstanding operating departments.

It is felt by your Committee that the physician in industry is occupying a place, which social and industrial conditions have made necessary, and has received, and continues to receive, financial returns on a scale comparable in amounts to those paid for relatively new and developing forms of endeavor.

#### A Study of Practice of Medicine by Corporations

The practice of medicine by corporations, theoretically does not exist in New York State inasmuch as the law definitely says that corporations cannot practice medicine. Those interested in proving that the practice of medicine of the corporation type does exist must be compelled in each instance to assume a very difficult burden of fact finding. There are a number of industries where, in general, the letter of the law is complied with, and yet the provision of facilities for diagnosis and treatment may be otherwise interpreted. This appears to be particularly true during the development of the present depression, where certain industries have found it necessary to dispense with the services of physicians and are relying, for the maintenance of such medical facilities as they still deem needful, upon the industrial nurse. It would seem that here an element of liability must exist, even though the character of such services is in the majority of instances relatively simple. Most of the time, the rendering

of what is often considered unimportant medical service does not attract attention. However, the severe condition with mild symptomatology and an indefinite history will, from time to time, come under initial attention of this sort, with the result that only too frequently, conditions will be minimized, available time lost, and even disaster supervene.

The Endicott Johnson Company in New York State, as is well known, have felt it incumbent upon them to provide rather complete medical and surgical service, not only for employees, but also for members of employees' families. The same comment may be made of the Life Extension Institute, Consolidated Gas Company, Interborough Rapid Transit Company, and other large corporations. When it is attempted to apply the definition of corporate practice of medicine to what are deemed medical endeavors by these organizations, it is found that the physicians carrying on the work operate under their own responsibility. The medical departments in such corporations simply bear the title as such, and are not considered as a corporation's activity.

The terms "medical department," "medical office," "health department," and "health office," while construed by many to mean that these are departments operated by their respective companies, nevertheless indicate quite the contrary, and it is for the purpose of avoiding criticism under the legal meaning of the term "practice of medicine by corporations," that this is done. Where the nurse is the sole functioning unit in a medical office or medical department and is diagnosing and treating cases of disease, no matter how simple, there is no dodging the issue that such a nurse is practicing medicine, and under the law of the State of New York nurses cannot practice medicine. The acts which she may be carrying out, in company assigned space and on company time, while she is receiving remuneration from the same source might be understood to be the practice of medicine by corporations. Here again, there exists an element of doubt, in that the liability for unlawful acts must rest with the nurse. The fact that she is using company space and company facilities in the pursuance of her unlawful activity, even though she is receiving compensation from a corporation, does not mean that the corporation is practicing medicine. The physician operating under the same circumstances, must be con-

sidered as practicing medicine in his own right under the law, regardless of the fact that facilities are placed at his disposal, and that he is receiving compensation from the corporation. Furthermore, this is not modified by the fact that management can exercise a certain amount of control over his activity.

It is true, that in certain parts of the country outside of New York State company-conducted medical organizations are inevitable, as for example, in such districts as those served by the Colorado Fuel and Iron Company. The Laurentide Company of Quebec, and others, where the local community does not provide medical talent or hospital facilities. Sometimes these may become very elaborate and provide for the needs of the entire community as participants by virtue of their membership in the employment group of a particular company. Here again, the physician rendering the service may be operating entirely under the law and within his own rights.

As a result of the contacts of this subcommittee with various industries throughout New York State, and in other parts of the country, it is only the very exceptional medical endeavor that is operated under radical management, where controversial situations arise. In most instances, the medical organizations in the several businesses serve as clearing houses for the sick or injured employees. This is becoming a more and more prominent part of industrial medical service, and is a natural outgrowth of the fact that the sick employee is a charge against the business and in the end must be responsible for a certain amount of the cost of the product or service delivered by a particular business. This means that the providing of first aid and diagnostic facilities carried out by medical personnel, may have results that are reflected in the manufacturing or service cost. The committee finds that very generally the results of such diagnostic facilities are placed in the hands of community physicians by the very natural system of direct reference.

It is to the advantage of management, that employees receive adequate medical care, and the provision of diagnostic facilities functioning chiefly in the investigation of conditions ordinarily neglected by the employee, and the provision of medical advice that would otherwise not be sought, constitute a form of service decidedly to be encouraged. This would naturally lead to the reference of employees to capable

physicians The employee who is ill while on the job either is too sick to work, under which condition an effort should be made to find out the nature of the difficulty, and see that the individual is placed under proper medical supervision, or if able to continue at work, an immediate intelligent therapy should be provided, in lieu of the inevitable and often disastrous self-diagnosis and self-medication

Such industries as the Norton Company, Thomas Edison interests, Orange, N. J. the American Rolling Mill Company, Winchester Arms Company, National Harvester Company, the Hood Rubber Company, Bethlehem Steel Company, General Electric Company, Solvay Soda Process Company, and United States Aluminum Company, are fairly representative groups who maintain facilities for this type of medical service Their most prominent service is that making for early adequate diagnosis and the institution of adequate medical service for their employees This statement means the utilization of such medical services as are provided in the industrial communities and supplementing them as justified The medical organizations of these companies also spend a large part of their time on the periodic health examination and the maintenance of safe working conditions As a result of contacts with the medical officers of these organizations it is apparent that, while the continued treatment of disease is not the policy—even though inadequate emergency, medical, surgical and hospital facilities have prompted the institution of a more adequate service—nevertheless, they are still subject to criticism

It is the opinion of your committee that it would be exceedingly difficult to prove an instance of actual practice of medicine by one of these corporations according to the wording of the law There are groups of medical individuals organized under lay control which operate for profit, but where the physician must be considered as carrying on the practice of medicine as he is privileged under the law Instances of this kind exist in many organizations rendering nation-wide and even state-wide service, some purely as health conservation measures others offering service for the socially ill and industrially sick and injured, and even in the realm of physiotherapy, rehabilitation and vocational guidance

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Under way at present are the following courses in nine Counties

##### COURSE ON TRAUMATIC SURGERY

arranged for Schoharie and Otsego County Medical Societies by Dr. John J. Moorhead

March 28 *Fractures in General*

Dr. Henry H. Ritter, 755 Park Ave., N. Y. City

April 11 *Intra abdominal Injuries*

Dr. Herbert Bergamum, 101 E. 89th St., N. Y. City

April 25 *Joint Injuries*

Dr. Willis W. Lasher, 565 Park Ave., N. Y. City

May 9 *Fractures of Long Bones*

Dr. Joseph H. Gaston, 101 E. 89th St., N. Y. City

May 23 *Head Injuries*

Dr. H. V. Spaulding, 115 E. 61st St., N. Y. City

June 6 *Treatment of Hand Injuries and Wounds*

Dr. David Goldblatt, 300 Central Park W., N. Y.

##### COURSE ON INFECTIOUS

arranged for St. Lawrence and Jefferson County Medical Societies by Dr. Frederick T. van Beuren, Jr., New York City

April 12 *Bacterial Invasion of the Human Body*

Dr. F. L. Meloney, 180 Fort Washington Ave., N. Y.

April 19 *Rheumatism*

Dr. F. M. Hanger, Jr., Presbyterian Hospital, N. Y.

April 26 *Infections of the Head and Arm*

Dr. Hugh Auchincloss, 109 E. 67th St., N. Y. City

May 3 *Puerperal Infections*

Dr. E. Everett Bunzel, 215 E. 72nd St., N. Y. City

May 10 *Infections of the Bones and Joints*

Dr. C. R. Murray, 180 Fort Washington Ave., N. Y.

##### COURSE ON TRAUMATIC SURGERY

arranged for Herkimer and Montgomery County Medical Societies by Dr. John J. Moorhead, N. Y.

March 29 *Fractures in General*

Dr. Henry H. Ritter, 755 Park Ave., N. Y. City

April 5 *Head Injuries*

Dr. Carl A. Peterson, 115 E. 61st St., N. Y. City

April 12 *Abdominal Injuries*

Dr. H. M. Bergamum, 101 E. 89th St., N. Y. City

April 19 *Fractures of Long Bones*

Dr. E. A. Dooley, 101 E. 89th St., N. Y. City

April 26 *Joint Injuries*

Dr. Willis W. Lasher, 565 Park Ave., N. Y. City

May 3 *Hand Infections and Wounds*

Dr. W. D. Ludlum, Jr., 115 E. 64th St., N. Y.

##### COURSE ON INTERNAL MEDICINE

arranged for Tioga County Medical Society by Dr. Luther F. Warren, Brooklyn

April 4 *Coronary Thrombosis*

Dr. George H. Roberts, 46 Sidney Pl., Brooklyn

April 11 *The Diagnosis and Treatment of Biliary Tract Disease*

Dr. A. F. R. Andresen, 88 57th Ave., Brooklyn

April 18 *The Treatment of Cardiac Failure*

Dr. J. H. Crawford, 225 Lincoln Pl., Brooklyn

April 25 *Ulcerative Colitis*

Dr. John B. D'Albora, 27 Eighth Ave., Brooklyn  
May 2.....*Pernicious Anemia*  
Dr. Eugene Marzullo, 75 Remsen St., Brooklyn

#### COURSE ON NEUROLOGY

arranged for Steuben and Chemung County Medical Societies by Dr. Foster Kennedy, New York City

March 29.....*Description of the Nervous System*  
—*Neurological Examination*

Dr. Abraham Kaplan, 73 E. 90th St., N. Y. City

April 5.....*Pathology and Clinical Neurology*  
Dr. Lewis D. Stevenson, 410 E. 57th St., N. Y.  
April 12.....*Diseases of the Spinal Cord*  
Dr. Louis Hausman, 140 E. 54th St., N. Y. City  
April 19.....*Epidemic Encephalitis*  
Dr. E. D. Friedman, 1192 Park Ave., N. Y. City  
April 26.....*Brain Tumors and Brain Injuries*  
Dr. S. Bernard Wortis, 410 E. 57th St., N. Y.  
May 3.....*Epilepsy*  
Dr. Foster Kennedy, 410 E. 57th St., N. Y. City

## SPECIAL ARTICLE

(Continued from page 380)

alarming proportions, the recent widely scattered series is to be regarded as a danger signal. In spite of the low general prevalence of the disease, diphtheria epidemics still may, and do, occur.

The probable source of only one of the epidemics mentioned could be determined. The others apparently arose from hidden sources, rather than from clinically recognizable missed cases. The number of apparently healthy carriers discovered in each outbreak exceeded the number of clinical cases, indicating that carriers played a large part in the transmission of the disease. The importance of carriers and missed cases as sources of infection in diphtheria is not fully appreciated by the public. As shown by many surveys in this and other countries, diphtheria carriers are numerous at all times in places of any considerable size. The public must be taught that exposure to diphtheria can scarcely be avoided and that artificial immunization is necessary regardless of the reported incidence of the disease.

#### PROGRESS IN DIPHTHERIA IMMUNIZATION

There are 13 New York State cities of 10,000 or more population in which 35 per cent or more of the children under five years of age have been reported as immunized against diphtheria on January first of each of the past five years. A list of these cities—that is, New York State's diphtheria immunization honor roll—is given below:

Auburn,	Middletown,	Port Chester,
Ithaca,	Newburgh,	Port Jervis,
Little Falls,	Niagara Falls,	Rockville Center,
Mamaroneck,	Ogdensburg,	White Plains.
	Ossining,	

Of the remaining 54 cities with 10,000 or more population, 27 have good diphtheria prevention records, but there are 20 cities where the proportion of children reported as immunized has never reached 35 per cent, and there are 7 other cities

whose immunization percentages have fallen from satisfactory to low levels. Special efforts are to be made in the spring campaign to improve the immunization status of the 27 cities belonging to the last two groups mentioned.

#### CAMPAIGN PROCEDURES

Special emphasis will be placed on house-to-house canvassing as a means for encouraging parents to have their children immunized. Experience has amply demonstrated that home visiting by nurses, or especially instructed lay workers is one of the best methods of securing the results desired.

Newspaper articles, radio talks, and other publicity methods will be used freely, Popular literature, cards for physicians' offices, and publicity material for local use will be available.

Efforts will be directed toward the protection of children less than five years old, because of the high diphtheria morbidity and mortality in this age group. The incidence of diphtheria in older children is so low that, except during epidemics, large-scale efforts to immunize them cannot be expected to prevent many cases or deaths.

The toxoid distributed by the State Department of Health is the immunizing agent now recommended for general use. It is further recommended that toxoid be administered in two doses of 0.5 c.c. each, with an interval of one month between doses.

The full cooperation of physicians throughout the State, such as was given in the five-year campaign, is earnestly requested this year. That another campaign is advisable has been shown by references to recent diphtheria outbreaks, and to the unsatisfactory immunization status of many communities. With the active participation of the medical profession, the success of the new undertaking is in a large measure guaranteed.



## A STUDY OF DIABETIC DEATHS BASED ON AUTOPSIES

IVAN HLKIMIAN, M.D. and SAMUEL A. VOGEL, M.D.

From the Buffalo General Hospital and Buffalo City Hospital

We are to day confronted with a strange paradox, a continually rising death rate from diabetes despite the rather universal application of a specific remedy of proven efficacy. The medical profession is challenged, both by its natural interest and by the various comments which have been made, and are being made, in the lay press.

Statistics, which are readily available from the registration area of the United States, the City of New York, the Metropolitan Life Insurance Company, and various other sources, indicate that the death rates have been steadily increasing over a long period and that their progress has been affected very little by the advent of insulin. In the whole country diabetes is now credited with ninth place as the cause of death, the rate being 22 per 100,000. It is noteworthy that the death rate among children and young adults has been distinctly diminished in recent years, while among women, particularly those past the age of fifty, it has been definitely increasing.

The purpose of this study of 84 necropsy protocols is to add to the cases already in the literature and determine, where possible, the actual relationship of the diabetes to the cause of death.

For the reason that we believe that the above mentioned statistics may more or

less accurately indicate an increased incidence of diabetes, they do not necessarily reflect an increased mortality unless the actual cause of death in the diabetic is known. In other words, a patient's diabetes may contribute a varying and often an indeterminate element to the immediate cause of death.

The material which forms the basis of this report was gathered from the Buffalo General Hospital and the Buffalo City Hospital. It covers the period from 1923 to 1933. The data represent the opinions of several pathologists, who did the post mortem examinations in a routine manner without having had the present study specifically in mind. Therefore, we must make certain allowances for their interpretation of findings and for their qualitative descriptions.

### DISCUSSION

Of the 84 necropsied cases (Table I), approximately 90 per cent were after the age of forty, which corresponds with the generally accepted view that diabetes is a disease of later life. The series is rather small to justify any mention of sex differentiation. However, 49 were males and 35 females. The average duration of the diabetes, as determined from the patients' histories, indicates that most of the patients

TABLE I

Decade	1		2		3		4		5		6		7		Total
Sex	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Number of patients	1	0	4	1	3	1	9	2	15	17	12	10	5	4	84
Average duration of diabetes, years	1/12		3		4	5	4	2	4		7		7		392*
				Av		Av		Av		10		Av		10	
			Cases	3/3	Cases	3/3	Cases	3/3	Cases	3/3	Cases	3/3	Cases	3/3	
Insulin treatment	0		4	3	2	5	2	0	8	3	5	5	3	5	92*

\* Total years for entire group

Read at a meeting of the Fifth District Branch of the Medical Society of the State of New York, October 5, 1933, at Niagara Falls, N. Y.

had the disease for some time, especially those in the sixth and seventh decades. If the total period of diabetes is computed in the 84 patients, we find that the sum equals 392 years. Only 24 of these patients had received insulin prior to their admission to the hospital. The total number of years of insulin administration in this group was 92. Presumably, many of the patients who did not receive insulin should have. The majority of patients in this entire group were in all probability treated haphazardly, if at all, and consequently do not represent an ideal state. Nevertheless, they undoubtedly represent a fair average of diabetic patients who have been admitted to a general hospital during the past ten years and, therefore, serve to demonstrate the pathology of diabetes.

TABLE II.—CAUSES OF DEATH

Decade	1	2	3	4	5	6	7	Total
Diabetic coma.....	1	3	..	5	11	..	..	20
Coronary occlusion.....	..	..	..	1	2	..	..	4
Gangrene extremities.....	..	..	..	..	4	7	6	17
Congestive heart failure (endocarditis).....	..	..	2	1	..	2	1	6
Cerebral thrombosis.....	..	..	..	1	..	3	3	7
Lues (cardiovascular).....	..	..	1	2	..	1	..	4
Pyemias, abscesses, carbuncles.....	..	..	..	3	1	8	2	14
B. Welchii infection.....	..	..	..	..	2	..	1	3
Pulmonary tuberculosis.....	..	2	1	1	4	1	..	6
Carcinoma.....	..	..	..	..	1	2	..	3

COMA.—Twenty deaths from coma out of a group of 84 diabetic deaths is far too large. A great many of these occurred in the early insulin era and we believe that the mortality from coma would now be much less. Also, the majority occurred in the fifth decade; it is well known that the older person does not tolerate coma as well as the younger and that he is more apt to have irremediable complications.

TABLE III.—FREQUENT ADDITIONAL FINDINGS

Decade	1	2	3	4	5	6	7	Total
Coronary sclerosis.....	..	2	7	15	16	8	..	48
General atherosclerosis.....	..	..	2	5	10	6	..	23
Cholelithiasis.....	..	..	1	3	4	..	..	8
Cholecystitis.....	..	..	..	..	1	..	..	1

In a statistical study of deaths from coma by Dr. Louis Dublin of the Metropolitan Life Insurance Company on Dr. Joslin's cases, it was determined that during the pre-insulin period, 60 per cent of diabetics died in coma during the Naunyn period, whereas in the Allen era, coma was

responsible for 40 per cent of all deaths. In the early Banting period, the deaths from coma dropped to a little above 10 per cent, while later in the Banting period deaths from coma were further reduced to about 10 per cent.

ARTERIAL DEGENERATIVE DISEASES.—These comprise gangrene, coronary occlusion, general arteriosclerosis with hypertension, and cerebral thrombosis. They count for 28 of the deaths (Table IV). There was no patient whose death was caused by this means before the fourth decade. There were 2 in the fourth decade and 12 in the fifth, 7 in the sixth, and 12 in the seventh.

TABLE IV.—SUMMARY OF IMMEDIATE CAUSES OF DEATH

Decade	1	2	3	4	5	6	7	Total
Diabetes (coma).....	1	4	..	6	8	1	..	20
Infections.....	..	1	2	3	13	7	1	27
Arterial degenerative diseases.....	..	..	..	2	7	12	7	28
Carcinoma.....	..	..	..	..	..	..	..	..
Miscellaneous.....	..	..	..	..	..	..	..	..

Sclerosis of the coronary arteries was considered to be of sufficient grade to receive comment by the prosectors in 48 of the patients, all after the third decade, but notably in the fifth and sixth. We have no way of ascertaining accurately whether this sclerosis was beyond what would be expected in the nondiabetic; this point must be left to conjecture.

Concerning the incidence of degenerative vascular disease, it will again be noted from Dublin's figures that the frequency of vascular disease as a cause of death has been mounting as the treatment of diabetes has been improved. This is partly accounted for by the fact that diabetics are now living long enough to acquire nondiabetic degenerative diseases. Prior to 1924 Joslin found that his patients died at the average age of 49. Two years later this figure had climbed to 59, and one year later it had reached 60.9 years.

In this connection it is well to call attention to the increasing length of the average span of life. In 1900 it was 55 years. In 1930 this had been extended to 65. It will be seen in our series that 63 of the 84 deaths occurred after the fifth decade. It becomes apparent, then, that by making it possible for people to live longer, we have also increased their chances of developing diabetes. Thus, there has been created a larger number of potential diabetics.

**INFECTIONS.**—Under this heading are included patients who died of pyemia, abscesses and carbuncles, pulmonary tuberculosis, postoperative *B. welchii* infections, endocarditis with congestive heart failure, and syphilis (mostly cardiovascular). Thirty-three of the 84 met such a fate. In the case of *staphylococcus* infections there is no doubt that a patient with uncontrolled diabetes is a fertile field for such invasion and that this association establishes a vicious circle which is often impossible to break. Similarly, the diabetic, especially when the disease is active, is a very acceptable host for *tuberculosis*. Fortunately, this combination of diseases appears to be decreasing in recent years and tuberculosis often may be completely arrested by treatment. In general it may be said that the controlled diabetic is not much more, if any more, susceptible to infections than a nondiabetic.

It is interesting that but 3 of our group died of *malignancy*. One would expect a higher incidence in people of these ages. In fact, this seemed so striking that we were lead to review an equal number of necropsy protocols of nondiabetic subjects of the same age and found a much higher incidence of malignancy. Similarly, the association of gall stones and diabetes is reputed to be high. Our nondiabetic group showed a slightly higher frequency of this condition than the diabetic.

#### COMMENT

The diagnosis of diabetes is fairly easily made and probably it is rarely missed. Therefore, it is only natural that a death may be charged to diabetes where it does not specifically belong. In obscure cases

where there is no postmortem examination, diabetes may be given a too dominant place in the death certificate. Joslin has said that "diabetics are not immortal, although one would think that immortality was expected of them by statisticians."

We appear then to be facing an increased incidence of diabetes and consequently an increased number of deaths in people who are victims of this affliction. Various ideas to account for this have been put forth. It may be a combination of factors such as urbanization of our communities, the mechanization of our industries, the increased tempo and strain of our modern life, and the tremendous increase in sugar consumption. Bouchardat, a student of diabetes in the nineteenth century, admonished his patients by telling them "you shall earn your bread by the sweat of your brow."

#### SUMMARY

1. An attempt has been made to determine the cause of death in 84 diabetic patients by an analysis of necropsy protocols.

2. Degenerative arterial disease was responsible for one-third of the deaths. Infections accounted for slightly more than one-third. Coma, which was frequently complicated, was listed as the cause in 26 per cent. The remainder had miscellaneous causes.

3. The unfairness of attributing the deaths of all patients with diabetes to the diabetes itself is discussed. The rising reported mortality of diabetes concomitant with the rather universal use of insulin can only mean an increased incidence of the disease.

#### NINTH CONFERENCE OF THE INTERNATIONAL UNION AGAINST TUBERCULOSIS

The Ninth Conference of the International Union Against Tuberculosis will meet in Warsaw, Poland, on September 4, 5, and 6, 1934, under the chairmanship of Prof. Pieztrzynski. Reports will be made on three subjects as follows: "Biological Variations of the Tubercle Virus," by Prof. Karwacki of Poland; "Tuberculosis of the Bones and Joints," by Prof. Putti of Italy; and "The Use and Organization of Tuberculosis Dispensaries," by Prof. Leon Bernard of France. The representatives of the United States who will take part in the discussions are Dr. Esmond R. Long of the Phipps Institute, Philadelphia; Dr. Clarence L. Hyde of the Springfield Lake Sanatorium, East Akron, Ohio; and Dr. B. S. Pollak of the Hudson

County Tuberculosis Sanitorium, Secaucus, New Jersey. There will also be an afternoon lecture by John A. Kingsbury of the Milbank Memorial Fund, New York, on "Methods in Further Control of Tuberculosis." Delegates are expected from the 43 countries represented in the Union. An attractive program of receptions and excursions has been arranged and visits will be made to the chief antituberculosis institutions of Poland.

A special party is being arranged from the United States and for those who can leave in advance a trip to Russia is scheduled that will permit delegates to arrive in Warsaw in time for the meeting. Further information may be obtained by addressing the National Tuberculosis Association, 50 West 50th Street, New York.

# THE MORTALITY OF ACUTE APPENDICITIS AS RELATED TO CLINICAL TYPES AND TREATMENT

JOHN J. WESTERMANN, JR., M.D.  
*New York, N. Y.*

In a recent advertisement by one of the largest life insurance companies there is a statement that the death rate from appendicitis in the United States has increased steadily during the past ten years. It goes on to advise the layman, that: "performed without delay an operation for appendicitis is almost always successful. Be sure to consult an experienced and skillful surgeon because many needless operations have been occasioned by incorrect diagnosis." Surely this advice demands much of the average lay intelligence.

As a matter of fact, in 1921, The Equitable Life Assurance Society paid 7,743 death claims, of which 193 were on account of appendicitis—in 1931 it paid 12,043 claims of which 332 were on account of appendicitis. It may be assumed that any slight increase in this proportion could easily be accounted for by improved diagnosis.

About 25,000 people die annually in the United States on account of acute appendicitis, and it is estimated<sup>1</sup> that there has been an increase of 30 per cent in the mortality in the past ten years. On the other hand, in<sup>2</sup> England and Wales a steady increase in the occurrence of acute appendicitis and a substantial decrease in the number of deaths from this disease have been noted for the past fifteen years.

The weekly bulletin of the New York City Health Department for November 21, 1931, states that in 1910 in sixty large American cities the death rate due to appendicitis was 13.3 per 100,000 while in the same cities, without increase in population, the rate for 1929 had risen to 18 per 100,000. It goes on to state that there is a great sacrifice of lives and that this sacrifice deserves serious consideration.

The recent report<sup>3</sup> of the mortality of acute appendicitis from a large southern city does not coincide with these statements.

It seems obvious that studies of acute appendicitis should be made regularly and brought to surgical attention with a view to a final standardization of treatment. One of the striking facts about this study of 500 consecutive cases performed by the several members of the Surgical Staff of

St. Luke's Hospital in New York City, is this standardization in the treatment. And, except for recent improvements in the postoperative care, it has persisted through the past fifteen years. The outstanding points in the treatment are: (1) Immediate operation. (2) Repeated frequent examination where the diagnosis is in question. (3) Operation where only one or two of the cardinal symptoms are present. (4) Drainage by the use of rubber dam only, entirely replacing the use of tubes and other methods. Ordinarily this drain is placed at the base of the cecum or in the pelvis. (5) Postoperative administration of fluids in every way and frequent use of transfusion.

The 500 cases upon which this study was based are consecutive admissions to St. Luke's Hospital during the years 1928, 1929, and 1930, and are cases which were proved to have either acute suppurative or gangrenous appendicitis by pathological examination: 92 of these were gangrenous, 304 were drained at operation, and 190 presented definite free purulent material in the peritoneal cavity. It should be noted that this does not include the mildly acute and acute catarrhal appendices.

Experience has taught the author that acute inflammation of the appendix is not at all times the same condition and that it may be classified into three separate and distinct groups, based on the history, pathological findings, and to a lesser degree the symptoms. The surgical treatment should be varied according to the group, and the prognosis may be very closely determined by this classification.

It will be evident that this attempted classification differs from that of Wilkie<sup>4</sup> and others in that here the author does not divide the process in any case into its separate stages. It is not his opinion that perforation, kinks, and scars change the course of the disease in any way.

Group 1 includes those cases which are coincident with, or immediately subsequent to, respiratory and other acute infections elsewhere in the body. The disease is usually limited to the outer coats of the appendix and is presumably hema-

togenous in origin, and in no case has there been a history of previous attacks. Where cultures were obtained, they were invariably streptococci. The pathological examinations are strikingly similar and, for example, the author will quote from two reports as made by Dr Leila C. Knox: "there is an acute suppurative lesion with necrosis and hemorrhage throughout the wall. The muscle is edematous and swollen, the surface is covered with exudate, the mucosa, although hemorrhagic, is intact." The second is of an appendix removed during an attack of acute tonsillitis and exactly typical. "There is an acute suppurative process involving the entire wall. The mucosa is unusually well preserved, the epithelium showing active hyperplasia. The submucosa, however, is suppurating, the entire muscle is infiltrated and thickened and the surface is covered with granulations in which there is much purulent exudate."

To further illustrate this type a quotation from an operative record and also the pathological report by Dr Knox will serve. This patient was operated upon for acute mastoiditis ten days before, and death from general peritonitis followed the appendectomy, the culture from the peritoneum was hemolytic streptococcus. "The appendix was found free in the peritoneal cavity. It was injected and thickened, and although inflamed, it did not appear to be primarily the cause of the infection. The cecum was indurated, injected, and appeared to be the source of the trouble. Glands in this region were enlarged and inflamed." The pathological report states that, "the appendix is the seat of an acute suppurative lesion with much involvement of muscle and with focal areas of infiltration by polymorphonuclear leukocytes chiefly around the blood vessels. The mucosa is normal."

The bacteriological work done and reported by Rosenow, Borgen, and Haden from time to time is sufficient evidence that acute appendicitis may be of hematogenous origin, even though not all bacteriologists obtain the same selective organisms in their cultures.

We might place in this group also, the appendiceal disease which occurs in epidemics. Among others, Rosenow and Dunlap,<sup>5</sup> in 1916, reported an epidemic of appendicitis and parotitis probably due to streptococci in dairy products.

Dorsey<sup>6</sup> states, "that the relation of focal infection to appendicitis is definitely shown by the marked contrast between the degree of localization in the appendices of streptococci found in the nasopharynges of patients who had appendicitis and those who had arthritis."

It seems reasonable to believe that when streptococci cause acute appendicitis, it is of hematogenous origin, and that the lesions are entirely mural.

Of these 500 cases 83 could be placed in Group 1. On the basis of clinical, bacteriologic, and microscopic evidence the preliminary infection was tonsillitis in 25 cases, pneumonia in 10 cases, middle ear disease in 12 cases, acute rheumatic fever in 4 cases, and measles in 8 cases. Although the number of deaths in the entire series was 39, or 7.8 per cent, in this group of 83 cases the mortality has been conspicuously higher, namely, 16 deaths, or 17.1 per cent.

An analysis of this group shows that it is essentially a disease of younger persons, the average age being thirteen and one-half years, and that it is due to streptococci and infrequently staphylococci. One is impressed with the initial severity of the onset and the early appearance of general peritoneal involvement. Although paralytic ileus is a common sequel, ileostomy is fatal. Trauma and excessive operative interference in these cases accentuate the infection and interfere with the natural peritoneal resistance to the infection in most cases. An intramuscular incision should be the one of choice. Drainage with rubber dam should be instituted in the presence of free fluid. The appendix should not be removed if there is any difficulty experienced in the attempt. However, this occasion is not so frequent with the experienced operator. Ileostomy and any other secondary measures are very poorly tolerated and always light up the infection. Spinal anesthesia is useful in an attempt to overcome ileus. One cannot stress too strongly the early and copious administration of fluids including the large saline and glucose infusions and repeated blood transfusion.

In a second group are included those cases of appendicitis which are intrinsically of the appendix as a result of injury to the mucosa, with ensuing infection by organisms of the fecal type. This group may be classified primarily, by the pathological examination of the specimens and

to illustrate the writer will again quote from one of Dr. Knox's reports: "There is a dilatation of the lumen with atrophy of the coats, and with an added acute diffuse suppuration with much necrosis. The necrosis extends throughout the mucosa, and there is widespread infiltration of the submucosa with polymorphonuclear leukocytes and round cells."

As opposed to Group 1, these cases are not fulminating, general peritonitis is not an early complication, and in the cases seen three or four days after onset one is more likely to find signs of a localizing abscess in the right lower quadrant rather than a spreading peritonitis<sup>7</sup> with probably a vaccination of the peritoneum.

Here one finds predominating digestive symptoms with a history of earlier attacks of a similar nature. Vomiting occurred in 90 per cent of the cases in this group. And the classical symptom, pain in the epigastrium, later radiating to the right lower quadrant, was present in 80 per cent of the cases in this group. This is the common type of appendicitis occurring in 372 of these 500 cases.

From this study it is evident that this type has a definite tendency to be self-limited with abscess formation, and that the mortality is, except upon rare occasions, due to excessive operative interference. In other words, in the majority of these cases, regardless of the duration of process (and we have records of some of two or three weeks' duration) peritonitis and death have been brought about by too radical efforts upon the part of the operator, together with a fixed determination to remove the appendix, regardless of the risk. A most valuable procedure, and one which is rapidly meeting with favor in the presence of abscess formation or localizing peritoneal involvement, is the induction of drainage at the site with a minimum of surgical trauma.

Incision and drainage only was carried out 16 times in this series and resulted favorably 11 times. It was done only where the prognosis was extremely poor and if we bear this in mind, the results are remarkable. It might be added that the patient should be advised that the appendix is not removed in such cases, and warned to seek surgical assistance in the event of another attack. Four of the 11 who recovered from the original attack returned to the hospital and were operated upon for acute appendicitis successfully from two

to six months following their original illness.

To quote from the operative records to illustrate just what is meant by death due to operation: "Local anesthesia was used, but nitrous oxide and ether had to be resorted to during the course of the operation. A McBurney incision was made. Because of difficulty in choosing the right place for the incision there was difficulty in locating the appendix. After the peritoneum had been opened the appendix was finally secured and tied off near its base with chromic catgut. No attempt was made to tie off the appendiceal artery nor to invert the stump. A drain was placed at the site of removal." The record of the gross pathological findings accompanying this operative record stated that "there was free pus exuding from the abscess, in the center of which lay a necrotic appendix." Operative time was one hour and twenty minutes. A reference to the following chart shows the close relationship between the mortality and the applied surgery in this group.

Of the 500 cases studied, 372 should be included in Group 2 by the history and pathological report. There were 18 deaths in this group, in actual numbers, but 2 more than in the first group, or a mortality of 4.1 per cent, demonstrating the relative benignancy as compared with the first. Furthermore, the age incidence in this group was 30.6 years, whereas the hematogenous type apparently was more or less limited to younger individuals.

A résumé of the tabulation of the deaths in this group accentuates the facts that: first, a right rectus incision was used 11 times (always making for a prolonged operation with more exposure of the peritoneum) and second, that ileostomy (again prolonging and increasing peritoneal exposure) was used 5 times.

Group 3 includes those cases which occur chiefly in older people. The average age of the 45 cases in this series was 56 years. It is characterized by a slow onset, with general digestive symptoms, and with the physical signs centered in the lower abdomen from onset. It occurs where the appendix has been the seat of previous inflammation and presents<sup>4</sup> physical deformities which favor the occurrence of inflammation. The mortality is higher, chiefly due to the age incidence and lack of resistance to operation in persons who present the usual physical deficiencies of age.

Age Sex	Duration	Incision	Path Report	Culture	Cause
34 Male	96 hours acute arthritis	Intramuscular with drain	Acute suppurative	Hemolytic streptococci	General peritonitis
23 Male	72 hours	Right rectus with drain	Acute suppurative	Hemolytic streptococci	Paralytic ileus and ileostomy
47 Female	120 hours following tonsillitis	Intramuscular with drain	Acute suppurative		General peritonitis
2 Female	36 hours during acute bronchitis	Right rectus with drain	Acute suppurative		General peritonitis
7 Male	9 days during convalescence from mastoid operation	Intramuscular with drain	Gangrenous	Hemolytic streptococci	General peritonitis
13 Male	24 hours with acute bacterial endocarditis	Right rectus with drain	Gangrenous	Hemolytic streptococci	General peritonitis
34 Male	96 hours onset with pneumonia and chill	Intramuscular with drain	Acute suppurative	Hemolytic streptococci	General peritonitis
41 Male	48 hours	Right rectus exploration with drain	Gangrenous	<i>Streptococcus viridans</i>	General peritonitis acute toxic degeneration of liver (autopsy)
14 Female	6 days with acute tonsillitis	Intramuscular	Acute suppurative	Hemolytic streptococci	General peritonitis
17 Male	24 hours after tonsillitis onset with chill	Intramuscular drainage would probably have altered outcome	Acute suppurative		Death followed post-operative attempt to drain wound of general infection
10 Female	1 week during acute arthritis	Intramuscular with drain	Acute suppurative	<i>Staphylococcus aureus</i>	General peritonitis secondary hemorrhage
10 Female	24 hours with pharyngitis	Intramuscular with drain	Acute suppurative		General peritonitis
6 Female	5 days during course of pneumonia	Intramuscular with drain	Acute suppurative	Hemolytic streptococci	General peritonitis
21 Female	48 hours	No operation, too ill	Gangrenous (autopsy)	Hemolytic streptococci	General peritonitis
2 Female	48 hours with bronchitis	Right rectus with drain	Acute suppurative	Hemolytic streptococci	General peritonitis
38 Male	24 hours	Intramuscular with drain	Acute suppurative	Hemolytic streptococci	Mechanical obstruction on 5th day ileostomy on 9th day, death on 10th day
55 Female	48 hours	Intramuscular with drain local anesthesia	Acute suppurative	<i>B. coli communis</i>	Peritonitis difficult operation
19 Male	1 week abscess	Right rectus drainage and ileostomy	Gangrenous	No growth	Peritonitis operative time 1 hour 32 minutes
34 Male	48 hours	Right rectus drain and ileostomy	Gangrenous	<i>B. coli communis</i>	General peritonitis ileostomy on 4th day with death 24 hours after
40 Male	5 days	Intramuscular drainage without removal of appendix		<i>B. coli communis</i>	Peritonitis delay due to incorrect diagnosis
42 Female	48 hours	Intramuscular with drain	Gangrenous		Peritonitis and pyonephrosis
39 Female	72 hours	Right rectus with drain	Gangrenous		General peritonitis
17 Female	24 hours	Intramuscular with drain	Acute suppurative	<i>B. coli communis</i>	Peritonitis ileostomy for ileus
2 Female	72 hours	Right rectus with drain	Acute suppurative		General peritonitis pyelophlebitis
13 Male	4 days	Intramuscular with drain	Acute suppurative	<i>B. coli communis</i>	General peritonitis secondary abscess of liver
49 Male	48 hours	Right rectus with drain	Acute suppurative		Appendix torn in attempted removal with profuse intra abdominal hemorrhage, death in 60 hours with temperature 106°F
50 Female	1 week	Right rectus with drain	Acute suppurative	<i>B. coli communis</i>	Exploratory operation general peritonitis
6 Male	1 week	Right rectus drainage and ileostomy	Acute suppurative		General peritonitis long operative procedure death in five hours
23 Female	24 hours	Intramuscular	Gangrenous	<i>B. coli communis</i>	General peritonitis paralytic ileus difficult operation with partial removal of appendix base was not ligated
19 Male	48 hours	Right rectus with drain	Gangrenous		Peritonitis secondary pelvic abscess ileostomy
32 Male	5 hours	Intramuscular with drain	Gangrenous		General peritonitis
21 Male	72 hours	Right rectus with drain	Acute suppurative	<i>B. coli communis</i>	General peritonitis paralytic ileus ileostomy

Age	Sex	Duration	Incision	Path. Report	Culture	Cause
39	Female	48 hours	Right rectus with drain	Gangrenous		General peritonitis ileostomy
50	Female	24 hours	Right rectus with drain	Acute suppurative		Thrombosis left femoral artery amputation left leg
60	Male	24 hours	Right rectus with drain	Acute suppurative		Postoperative collapse of lung
64	Male	96 hours	Right rectus with drain	Acute suppurative	<i>B. coli communis</i>	General peritonitis
62	Male	48 hours	Intramuseular drain	Acute suppurative	<i>B. coli communis</i>	General peritonitis
52	Male	2 weeks	Right rectus with drain	Gangrenous		Intra-abdominal abscess coronary and common carotid thrombosis (autopsy)
67	Male	72 hours	Intramuseular local with drainage only	Patient moribund at operation		

There were only 45 cases classed in this group, of which 5 died. There is a marked tendency in this type to abscess formation, and of the 22 cases in which the duration was over four days, all presented palpable abscesses on physical examination. It is in this type that drainage of the abscess, preferably under local anesthesia, with a minimum of operative exposure, will reduce mortality markedly.

It is of general interest to note that 393 vomited at least once prior to operation and 387 gave the history of onset with epigastric pain, later radiating to, and becoming fixed in, the right lower quadrant. The average age of the entire series was twenty-two and one-half years.

Ninety of these 500 cases consulted a doctor prior to admission to a hospital, and in only 11 cases was there delay in establishing a diagnosis. Three hundred and sixty-one took some form of cathartic, showing that this form of home remedy is very popular for pain in the abdomen. However, the author believes, in this connection, that the harm from this medication lies in the delay in calling for medical attention while waiting for the expected benefit from the potion.

Ileostomy was used either with the primary operation or as a secondary procedure 9 times, and 7 of the patients died. The 2 cases which were benefited by this procedure had very definite signs of mechanical ileus. The others had either paralytic ileus or were exceedingly ill as a result of the disease. The author's experience leads him to believe that the recent enthusiasm for ileostomy is ill advised. However, it has a definite, though limited, surgical value in the presence of mechanical obstruction. Transfusion of blood,<sup>o</sup> long infusions of saline and glucose, and administration of fluids by other means are the only forms of treatment to be exhibited

in the presence of general peritonitis and a dynamic ileus. The duodenal tube is very useful in the treatment of the nausea and vomiting accompanying peritonitis.

Spontaneous fecal fistula occurred but twice in this series and each time proved beneficial. Both were operated upon for closure before leaving the hospital. In one of these cases mechanical obstruction was present on the fourth postoperative day and the improvement following the occurrence of the fistula was most striking.

In no case was any attempt made to lavage the peritoneal cavity at operation with any germicidal agent either highly colored or clear.<sup>o</sup> It has not proved of value in other hands.

The appendix was not removed primarily in 16 cases, of which 11 cases recovered. When it is considered that each of these was in most serious condition, the results argue well for the procedure.

To conclude, the mortality from acute appendicitis can be definitely lowered by the use of extreme care and gentleness at operation. The smallest exposure, compatible with the expedient removal of the appendix and adequate drainage makes for the smoothest convalescence. And furthermore, drainage alone, where it is recognized that removal of the appendix will be difficult, is an extremely useful procedure.

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CORONARY DISEASE AND ITS RELATION TO THE INCREASE OF  
CARDIAC MORBIDITY

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It would be hard to overestimate the far reaching effect of coronary thrombosis on the history of the world at the present time. When President Coolidge was needed to lead our country and they sought him for re nomination, he said, "I do not choose to run." He might have said, "I am threatened with coronary thrombosis and, therefore, I must not run." His recent death, presumably from coronary thrombosis, was only another of the many dramatic episodes that have characterized the history of coronary disease. A few days ago the man who had been selected as Attorney General of the United States fell a victim to it, and I would not like to begin to name the prominent and important men who have been stricken by it because I would never finish.

Instances such as these and the consideration of diagnosis in everything that pertains to acute stages of the disease have occupied much attention of late years. It seemed worth while, therefore, to consider the amount of illness that can be traced to coronary disease, apart from its acute manifestations. The recent increase in the number of people who are reported to die suddenly of heart disease accompanied by severe pain, or of acute indigestion, as it is sometimes called, is very noticeable. These represent the times when coronary disease for the moment occupies the center of the stage.

What we wish to study at this time is the large group of people who are afflicted by the discomforts and perils that are involved in the deterioration of the arteries of the heart. The tendency of the times is to classify a heart condition according to the cause rather than according to the particular pathology of the structures involved. Thus, chronic myocarditis, cardiosclerosis and cardiac atrophy may well be marked back to impaired circulation due to blood vessel disease.

The typical man attacked by coronary thrombosis is usually a man 57 years of age, well built and of the active, intellectual type. He is a man who would meet any emergency as it should be met, and his

reaction to even a condition so severe as coronary thrombosis is very different from what it would be in another type of person. One day this man is a central figure in a great business or profession, the next day he has succumbed to the most sudden and agonizing disease that we know. But beside the tragic occurrence, there may have been weeks and months of coronary stenosis with its warning, mild angina or breathlessness on exertion. For many years we have tried to read into the pathology of the heart muscle the causes of these symptoms. Now we know that when they develop in otherwise healthy people they usually mean coronary stenosis, with the ever present danger of coronary thrombosis. All attacks, however, are not so severe and many a person after a mild attack of coronary thrombosis has gone on with an impaired circulation in his heart muscle.

We have made a small statistical study of the last nineteen examples of acute thrombotic episodes which we have observed. This is relatively easy to do.

DATA ON 19 CASES OF ACUTE CORONARY  
THROMBOSIS

Age and sex	40 to 50	50 to 60	60 to 70	70 to 80
Male	2	8	4	4
Female	1			
Youngest, 42	Oldest 74			
Relation to angina pectoris, 15				
History of cardiovascular disease in family 9				
Duration of life following attack ranged from 2 days to 2 years in 11 cases				
<i>Recovery</i>				
Complete, 3				
Complete except for slight residual pain 1				
Recovered from acute attack, still in bed 1				
Residual pain on exertion, 1				
Residual pain on exertion or emotional stress 1				
Marked loss of myocardial reserve paroxysmal dyspnea occasional slight pain or still present 1				

The task that we set ourselves—to estimate the amount of coronary disease and its resulting illness apart from coronary thrombosis—proved more difficult than we expected. It is like arteriosclerosis itself in that it begins in most people rather early in life and advances as a physiologic process. This was proved by the careful pathological examination on many comparatively young men who were killed in the world war.

Coronary stenosis in its lesser degrees must exist in all examples of general arteriosclerosis. So we have a large number of people converging to severe coronary stenosis, some of whom will pass into the group of coronary thrombosis.

The progress of medicine is a constant repetition of the processes whereby groups of sick people, apparently suffering from the same disease, are finally divided into smaller groups that are differently explained. Coronary disease has now been taken out of a group where it was frequently classed as "acute indigestion."

In reviewing some of the ancient books on medicine, we have found that people suffering attacks of coronary thrombosis were often believed to have been poisoned. One can easily imagine at a time when poisoning was one of the attacks by enemies that a person seized with great agony, finally dying, might easily be supposed to have been a victim of an enemy. Even up to the present time coronary attacks have been interpreted as ptomaine poisoning. And often to-day the polite name for coronary thrombosis is "acute indigestion."

The appreciation of the intracardiac circulation as influencing the functions of the heart obviates the necessity for the so frequent use of the term myocarditis. This term when abused arouses a feeling of resentment in the minds of thoughtful cardiologists. No one can force himself to believe that an active structure such as the heart can be the seat of inflammation for a long period of time. Inflammation in such circumstances would shortly terminate in recovery or otherwise.

Another term that was formerly used a great deal is not heard any more, fatty degeneration of the heart. In studying the morbidity of coronary disease we must decide what portion of people who formerly had suffered from myocarditis and fatty degeneration are now to be included among those impaired by defective coronary circulation. The profession has not only gotten away from the too free use of the terms "myocarditis," "cardiosclerosis," and "fatty degeneration" but now uses the term "coronary sclerosis" which indeed is more precise, representing as it does the etiology of the impaired heart.

From time to time we observe a practically complete recovery after a typical attack of coronary thrombosis. We recently published in the *Journal of the American Medical Association* electro-

cardiograms of one patient, covering a period of twelve years. The person is still alive and now shows the electrocardiogram following a severe attack of coronary thrombosis many years ago. We have many others not so vividly recorded, but no matter how severe an attack may be, there is always hope of complete recovery. Three years ago a man had an attack of coronary thrombosis so severe that after morphine failed to stop the pain, in the name of humanity chloroform had to be used to relieve his agony. He lay for months with a feebly functioning heart, but he has now returned to active business.

Is the increase in coronary disease due to any change in the disease itself or to a change in the group of persons affected by it? Let us look at this question.

Epidemic diseases vary in intensity between one epidemic and another, and even endemic diseases such as syphilis or tuberculosis vary in their malignancy—apparently irrespective of the condition of the people affected.

With coronary disease it is different. The condition of the arteries is dependent upon the metabolic processes affecting the whole organism, and in turn these metabolic processes are influenced in a large measure by the hygienic habits of the people.

Not only typhoid fever but other severe illnesses, such as influenza, pneumonia, rheumatism, or gout, may upset metabolism and institute the onset of arteriosclerosis.

It would seem that an influence tending toward the increase in coronary disease is to be found in the changed food habits of modern times, particularly in the great cities. The rich foods are so abundant and people's habits of eating are so luxurious that a large percentage of people are overfed.

Alcohol apparently has its effect only by increasing the food intake by stimulating the appetite.

The proteins of milk seem to be free from a tendency to produce arteriosclerosis. A notable evidence of this is found in the prolonged lives of people who get most of their proteins from milk products.

The existence of diabetes in people who develop arteriosclerosis is probably coincidental in that the same group is the group that would otherwise develop arteriosclerosis.

The same is true of hypertension for,

like diabetes, it is incidental to the same group that develops arteriosclerosis. However, hypertension hastens the development and increases the hazards of arteriosclerosis.

Some clinicians may fall into the foolish error of ruling out arteriosclerosis because they cannot feel hardening of the radial artery or because the temporal arteries do not show themselves. As a matter of fact, the observable changes in these arteries do not encroach on the lumen and are of little clinical importance. The place where arteriosclerosis is important is in the smaller arterioles that cause obstruction in the circulatory bed.

The occurrence of arteriosclerosis and hypertension in members of the same family is interesting. It happens quite often in brothers, coming at about the same age and with about the same degree of circulatory degeneration. Occasionally, husband and wife are under treatment at the same time.

The hereditary tendency is undoubtedly very strong. Some families live much longer than others. However, in the short-lived family we often find a single individual living to a great age; this one will tell you that all his relatives died young. The probability is that, apart from heredity, the fact that people from the same group are subjected to the same habits of life, eat the same food, drink the same wine, and carry on the same habits of work and recreation, contributes to this result.

Arteriosclerosis will be prevented when we know enough about foods to determine which ones are suitable for the metabolic abilities of each individual, and when food is strictly adjusted to the person—just as an internal explosion engine runs best on the right mixture, which varies with different engines.

The prevention of coronary disease must therefore be the prevention of the general arteriosclerosis or arteritis of which coronary disease is a localized manifestation. Some years ago after intensive study in connection with the writing of a book on arteriosclerosis certain conclusions seemed to be justifiable. Fundamentally, we are dealing with a general disease badly named, for its principal manifestation is a disease with which most people are in a degree afflicted but which a few escape.

A few years ago a man was examined by us who was supposed to be 156 years

of age. He seemed to be absolutely free from any taint of arteriosclerosis.

Coronary disease will be found less often when society has been so adjusted that people can lead happy and care-free lives, and are interestingly engaged continuously in suitable activities, with no temptation to seek relief from worry and strain in excitement and dissipation.

It has seemed to me that very old people that we have known have on the whole had a happy childhood and youth and have had a pleasant outlook upon the world. As a rule, the people who have undergone hardships in early life have not survived to a happy old age.

When we first took up electrocardiography and made it a systematic habit to observe every person who came under care, we began to see examples of what we then called "bundle branch block," naming the disease after its resulting physiology rather than its cause. At that time this was considered quite a curiosity, and in 1920, we presented to the New York Pathological Society for their discussion a group of 28 of these tracings. However, in the text of the paper we said that most of these were examples of coronary thrombosis. It has been a very long time since we looked over these records, and we are rather surprised how little out of date they are. The same electrocardiograms presented to the Society at the present moment would be diagnosed as "coronary disease," laying the emphasis where it should go—on the etiology rather than upon the changes in the electrocardiogram. It is true though that bundle branch block can occur from other conditions than coronary disease. We have seen complete obstruction of the bundle of His cleared up on mercury and iodide, when probably due to a *gumma*, and we once made a very careful study of an old man suffering from Adams-Stokes disease, where a calcareous nodule was found obstructing the bundle. For that reason we must not go too far in writing coronary disease into all electrocardiograms showing what appear to be characteristic changes. Having fought earnestly for the recognition of electrocardiography as a practical part of clinical medicine, we do not want to see our victory spoiled by being carried too far.

All medical opinion is subject to tidal changes, just as the waters of the earth ebb and flow under the influence of the

moon. We cannot say that the moon causes this flux of the brain mass of the medical profession. The moon is not timed right but there may be some other heavenly body that revolves around the earth about once in ten years that causes the ebb and flow of the medical mind mass. Over a period of about five years medical opinion grows in a particular subject and reaches its climax during the next five years, and then the matter becomes an unemphasized routine and something else has taken its place. At the moment we seem to be nearing the climax of interest in coronary disease, and some of the opinions that we hold now are certainly not true but an astonishing proportion of them seem to be unquestionably fact.

As a matter of caution we would like to recite an experience of a week ago. A gentleman supposed to be suffering from coronary disease was sent to one of us because it was suspected there might be something wrong with the diagnosis. The patient, presenting himself, complained of precordial pain and pain in the left arm. He gave a history of having been seized by severe pain in the lower chest and down the left arm. He had been kept in bed eight weeks. He brought with him an electrocardiogram, showing an inverted T wave in the third lead, but nothing else could be found wrong on careful analysis—discounting the fact that the electrocardiogram was taken when the patient was under excitement and the string was perhaps a little loose.

The clinical diagnosis of coronary thrombosis had been made and had been supposedly confirmed by this electrocardiogram.

A careful analysis revealed the fact that the pain in the arm was pretty constant and of an aching character, that it was not increased on exertion and was not relieved by nitroglycerin. This made us suspicious that an error of diagnosis had been made. So we decided to re-take the history though it had already been written out as a matter of office routine. The wife who was present casually remarked that her father had died a short time before of the same disease.

We found that this man who was suffering from a rheumatic diathesis, with some involvement of the endocardium and who had some impairment of the kidneys, had been present and witnessed the illness and death of his father-in-law with what

seems to have been a typical example of coronary thrombosis. Shortly after this experience, the subject of our story had a severe attack of rheumatic pain and some digestive disorder. This then supplied subjective symptoms that, on account of the profound impression this man had received, was projected into so good an imitation of an attack of coronary thrombosis that it had deceived his medical attendants. We found, in fact, that he had just as much rheumatic pain in his right arm as he had in his left, but his mind was so centered on his left arm that he ignored that in his right.

As a matter of policy the man was told that at the moment he had no evidence of coronary disease and that he could consider that passed, but that he should be treated for his rheumatism and his kidneys as he had received sufficient treatment of his coronary disease. He was allowed immediately to return to his work.

We have seen other astonishing examples of imitative coronary disease.

We speak of coronary disease but clinically we must often mean a condition in which there is complete obstruction of at least one branch of the coronary artery. It is obvious that before this happened there must have been degeneration of the arteries and a period when the circulation in the arteries was impaired; certainly partial obstruction at the mouths of the coronaries is very common.

We certainly need more, as it were, of a bird's-eye view of coronary disease, considering it from its beginning and its effect—even when thrombosis does not occur. The commonplace is always more important than the unusual. The condition of the coronaries should be appraised in every heart problem presenting itself after middle life.

Coronary disease, when resulting in acute coronary thrombosis involving a considerable area of the heart, is so striking and dramatic an episode that it tends to overshadow interest in the narrowing and hardening of the coronary arteries which ordinarily precede this event and preclude the calm contemplation of the place of coronary disorders in heart disease as a whole. This is so because, while coronary thrombosis constitutes a condition with the most striking symptoms, coronary disease has barely any symptoms at all, and those symptoms that it has it shares with many other conditions.

By inference, we can draw the conclusion that coronary disease exists when there is a generalized arteriosclerosis, but in the absence of the electrocardiographic evidence of silent and symptomless, small thrombotic episodes, it is hard to prove the presence of *coronary stenosis* in any given heart. However, the cardiologist who has thoroughly studied the heart patient from every point of view will be able to appraise, though not measure, the degree of coronary involvement. Even in the presence of an acute, painful thrombotic episode, one may be very much mistaken as to the extent of the damage. A mild attack may have destroyed an amount of heart tissue involving the danger of rupture of the heart, while in a much more severe attack as measured by pain, there may be but a small lesion.

It is not so easy to predict what symptoms are to be expected from narrowing. The blood supply to the structure of the heart must necessarily be diminished or at least unstable under these circumstances. And here comes to me a difficulty that has always arisen in my mind when structural damage or degeneration has been attributed to poor circulation and that is, the question whether functional or structural damage results from a circulation that falls below the maximum but not below the minimum which will supply sufficient blood to the part. In other words, is enough blood supply sufficient? Is not the blood supply of the body vastly in excess of actual necessity? My own belief is that it is vastly excessive and that a sufficient blood supply to the heart muscle is all that is necessary—as far as its nutrition is concerned.

On the other hand there are strong arguments to prove that the functional activities of various structures in the heart are actually controlled by a regulation of their blood supply. One will do well to read Geraudel's book<sup>1</sup> in this connection.

The study of *prethrombotic coronary disease* is a difficult task. Whenever any generation of doctors throws overboard the beliefs and teachings of their predecessors in wholesale manner, they are generally wrong. Therefore, in saying that coronary stenosis is a better term than myocarditis or cardiosclerosis, we do not wish on every occasion to disclaim the older and highly descriptive terms. But if it is true that the impaired nutrition of the heart is caused by impaired blood supply,

we are certainly in the line of progress in using a term founded on etiology. Certainly cardiac symptomatology suggests cardiac circulation as its basis.

The fact is that persons with weak hearts can often do a lot more if they start gradually and work up to exertion than if they start suddenly. This would seem to mean that the cardiac circulation must have time to establish itself in the face of obstruction. We have often said to people, "Do not run for the street car—walk around the block first." It is the sudden strain on impaired arteries that brings out their dysfunction rather than prolonged effort of less intensity.

There are no symptoms of the prethrombotic stage that are not shared by many other diseases, except perhaps attacks of purely functional angina pectoris, but even in this we must always suspect that there has been some degree of thrombosis.

When people have attempted to give the symptoms of the prethrombotic stage they have always mentioned irritability, easy fatigability and easy exhaustion of strength, and it is true that we do get this previous history from a large number of people after thrombosis has occurred; many have been under strain but have kept up in spite of these symptoms.

The consideration of the prethrombotic stage is the consideration of arteriosclerosis in general and must be cared for along the line of diet, rest, exercise, systematic use of castor oil, and the development of a sound philosophy of life.

These studies of the circulation of the heart have upset the relatively simple conception that satisfied us for many years that the distress on exertion was due to diminished pulmonary circulation, and we did not draw any very close distinction between pain in the front of the chest and shortness of breath. It may be well, therefore to distinguish between a painful oppression in the front of the chest on exertion and dyspnea on exertion that involves air hunger.

The absence of a recognition of the symptoms of impaired function of the coronary arteries short of obstruction, has held back the appreciation of the importance of the disease for many years, for all pathologists of experience were quite familiar with the appearance of occasional instances of obstruction of the coronary arteries with degenerated heart muscle and occasional examples of aneurysm of

the ventricles—some of which had even ruptured. These were shown as curiosities but their importance was not recognized in connection with every-day clinical medicine.

That functional adequacy is as much related to circulation as it is to structure is illustrated by many examples in every part of the body: kidney function can be perfect with very small kidneys compensated by increased circulation. Functional response on the part of the blood vessels to meet the demand of functional activity on the part of organs is what fails during the prethrombotic stage of coronary disease, and this apparently gives rise to irregularities of rhythm and difficulties of response to the demands of exercise.

A. previously existing hypertension has been regarded as the most common causative factor in bringing about thrombosis of the coronary arteries. This is not entirely true, for we see coronary thrombosis in people who have been observed for a long period of time and who did not have hypertension. We do not believe that hypertension is the cause of coronary sclerosis, any more or less than it is the cause of sclerosis of other arteries. To be sure, the arteries of the heart take part in the general hypertrophy of the circulatory system that grows out of the continuously maintained blood pressure, but in the large hypertrophied heart found in this type there is no evidence of impaired circulation, and many of these people are remarkably free from cardiac discomfort.

The marked and persistent fall of blood pressure after coronary thrombosis is hard to explain on a purely mechanical basis. Shock contributes at first, but after shock has passed it still continues. May it not be a protective phenomenon to spare the damaged heart?

Some years ago we published a short note in the *Journal of the American Medical Association* on the analogy between the important arteries in the heart and the similar arteries in the brain, and we called attention to the experience of a person who, at the same time, had an attack of coronary obstruction and an attack of hemiplegia.<sup>2</sup>

It is frequently encouragement to people who have had an attack of coronary thrombosis to tell them that this happened to them rather than an attack of cerebral apoplexy. There is indeed a close relationship, and we wonder if the relative increase of morbidity in coronary disease has

been accompanied by a decreased morbidity in connection with the arteries of the brain. If that should be found to be the case, we must look for some factor that has favored the heart rather than the brain as the seat of the terminal accident. Of course, we must not forget that the embolic phenomena may account for the hemiplegic symptoms; but that happens usually later.

An interesting fact is that people always think of apoplexy as due to ruptured blood vessel, and an attack of the pain in the heart as due to obstructive blood vessel. As a matter of fact, many cerebral accidents are due to thrombosis—with much the same findings as are present in the heart.

It would be contrary to the history of medicine to suppose that the intensive publicity given to this condition at the present time should not lead to many erroneous diagnoses and the waste of much valuable time on the part of sufferers who are detained in bed for weeks at a time. Personally we have always erred, if anything, in early liberation of patients—even after an acute attack of coronary disease. In this way we are sure that we have saved much mental suffering, and in suitably selected individuals among the victims of coronary thrombosis, we have seen no harm come of it.

In regard to a very prolonged rest period after coronary thrombosis, we are not in agreement with those who make it an absolute routine. We think that each sick person must be a law unto himself.

A certain number of people in one attack of coronary thrombosis are destined to die suddenly shortly after from another attack. Of course, if we keep all of our people with coronary thrombosis in bed from six weeks to three months, we will escape blame for those who die suddenly during this period. But if these attacks are due to a new and entirely unrelated attack, or if they are due to a giving away of a wall of a heart that is hopelessly damaged (which, of course, is a very rare happening), are we not subjecting a large number of people to unnecessary hardship to save ourselves? The writers know they have always erred on the side of the early convalescence of people after heart attacks, and by good luck they have seldom had reason to regret it.

As a group, heart patients are in danger of death, but they are also in danger of invalidism and we honestly believe that

for many people invalidism is worse than death. The moral, physical, and financial damage from unnecessary imprisonment of people who have been sick cannot be measured. In people of ample means, this is mitigated somewhat by systematic massage, and the nicety of their surroundings. Many people settle this question themselves by refusing to "stay put."

The prolonged rest period is founded on the belief that this way we escape the danger of rupture, the danger of more extensive thrombosis and also on the belief that the healing of the heart is promoted. It seems obvious that a heart heals better when its activities are curtailed, but that does not mean that it is true. In fact, the reverse may be true—that the heart heals better when somewhat more active.

Hearts have been beating for millions of years, and it has never been possible to demobilize them for the sake of having them heal. Is it not possible that in a hundred million years the heart has acquired the ability to heal itself without demobilization, and if so, does a little activity more or less make any difference?

Leaving out the protection of ourselves from possible blame, we believe it is our duty, instead of prolonging the period of invalidism, to shorten it as much as possible, after a thorough reeducation of the victim as to the nature of the disease and the precautions he must take. Not a small part of this education is the training in the use of nitroglycerin; this is a laborious matter but very essential.

The ideal of complete cardiac comfort in the presence of scars of coronary thrombosis is often too much to expect. The person must be taught to live with the heart he has.

Therapeutics is not part of our subject, but the tendency to pain can be diminished

by the use of theobromine and sodium salicylate and the influence of castor oil on the gastro-enteric tract.

In conclusion, we are led to believe that the increase in those who are recognized as suffering from heart disease has been greatly enhanced by a knowledge of the functions of the coronary arteries. The number of people now listed as heart disease instead of indigestion must be very great, and also we must add those who formerly would have been considered as suffering from a long list of conditions, such as asthma, liver disease, kidney disease and so forth. Certainly a better knowledge of coronary disease has been a large factor in initiating studies that have placed emphasis on the heart where it belongs. A survey of this matter leaves no doubt whatsoever in our minds that coronary disease is a very important element in the increase of cardiac morbidity at the present time. The life insurance fraternity seems to hold the same view. There are a vast number of men in all parts of the world centering their attention on this problem, and we can look with confidence to an appreciation of its early beginning and discovery of methods of prevention and cure.

We have inquired of various insurance companies as to the incidents of coronary disease. Although because of forms of tabulation required, the statistics were incomplete, it seems that the companies are paying about 2 per cent of their claims to people following definite and recognized coronary thrombosis.

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121 EAST 60TH ST.

#### THE BULLETIN OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

The Medical Society of the State of New York takes a very keen interest in anything which would tend to increase the knowledge of cancer among the physicians of the State. The Society thinks that the above mentioned *Bulletin* is a very useful instrument for this purpose. It contains a number of short practical articles written by distinguished authorities in the field

of cancer therapy and cancer research. It offers, at a subscription price of only \$1.00 per year, an easy and practical way for the physician to keep abreast of cancer control progress. The *JOURNAL* is informed that a complimentary copy of the *Bulletin* will gladly be sent to any physician requesting it from the American Society for the Control of Cancer, 1250 Sixth Ave., New York.

## ACRODYNIA

L. de MELLO, M.D., and JAMES R. WILSON, M.D.

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*Synonyms.*—Infantile acrodynia, pink disease, vegetative neurosis, trophodermatoneurosis, neurovegetative syndrome in infants, erythro-edema, trophoneuroses probably due to infection, polyneuritis syndrome resembling pellagra, Swift's disease, erythema epidemicum, cheiropodalgia, erythema polyneuritis. Any disease with such a variegated nomenclature usually means a lack of actual knowledge of its etiology, or at least some disagreement among different observers, and that is the case in this peculiar and interesting disease. The term acrodynia is probably the most commonly used, and not a bad one when one considers that the most striking symptom is painful extremities.

*History.*—From 1828 to 1830 the French reported an epidemic of a certain syndrome quite similar to what we know to-day as infantile acrodynia. Since that time similar epidemics have occurred in Sweden and England, but which have been traced to the presence of arsenic in beer or wine. The infantile acrodynia which we know is probably a different entity from the adult acrodynia. At least we have not yet reached the stage where infants may be suspected of arsenic poisoning in wine or beer.

Our first acquaintance with the disease as seen in children is rather recent, only forty years as observed in Australia, and only for the last 15 years in this country. In 1903 Selter in Germany reported a series of cases of a disease which he called trophodermatoneurosis which answers the syndrome to-day known as acrodynia. Our attention is always drawn to the Australian physicians who were the first ones to observe a long series of cases. Swift of Australia, in 1914, was the original observer, and since then many others. In the United States we have in 1920 the report of Bilderback of Oregon, although Byfield of Iowa City had a paper in 1917 to be read at the meeting of the A. M. A. which was not read because of illness. In 1920 he published his series of 17 cases. Since then many other cases have been reported, but the interest in these 2 cases here reported is that we have two children with acrodynia in one family, and subse-

quent recovery after certain dietary deficiencies were corrected. The only probable clue to the etiological factor was the lack of certain types of food usually considered necessary for child development. We do not offer these as the actual cause, but as suspicious elements in these 2 cases, and wish to record them as further guide to future investigations.

*Etiology.*—Let us discuss the different etiological theories in this disease. We have to date three main possibilities: first that we may be dealing with a disease produced by some disturbance in certain elements in the food necessary to body development. This may be covered by the modern and euphonious term: avitaminosis, a word which may mean much or little, but anyway, gives us a footing upon which we can stand to start our discussion.

There are many diseases caused by dietary deficiencies, and as classical examples we may cite pellagra and beri-beri. In acrodynia we have certain changes in the nerve tissue which resemble those found in pellagra, and it is of interest to note that Findlay and Stern were able by removal of certain foods from the diet of young rats to cause a condition similar to that seen in acrodynia. In their experiments all the known vitamins were available, and this suggests that the absence of certain varieties of foods may be the cause more than certain specific vitamins. In the treatment of this disease addition of fresh food, yeast, cod liver oil, fruit juices is the main part of the treatment. Raw liver given to the rats produced a cure. Wyllie and Stern used raw liver diet in human cases with success. The main histological changes in the nerve tissue consist of degenerative changes in the peripheral nerves, disappearance of the myelin sheath of certain nerves, and a chromatolysis of the cells of the anterior horn cells. Warthin found that the changes in the skin and nervous system suggested the pathology of early pellagra. The changes in the skin are also identical with those seen in certain forms of light sensitization.

The second theory is based on the fact that most of the patients with acrodynia



suffer with evidence of some disturbance of the upper respiratory tract, with a congestion or inflammatory condition. This usually lasts through the early part of the disease. Some cases have been reported to have been cured after tonsillectomy, but this has not been verified by the majority of observers. One wonders whether these patients got well in spite of the tonsillec-

balance of the vegetative nervous system. That theory is so mysterious and alluring that unless we have real definite proof that such a state actually exists the less said the better, as undoubtedly this theory has led us into many pitfalls as we are dealing with a condition about which we know so little. But we do have nevertheless some symptoms such as the excessive



Fig. 1.—Case E. G. Acrodynia. Showing (1) papular eruption on hand; (2) hemorrhage beneath skin on central aspect of left forefinger tip; (3) intense redness of tips of fingers (this is marked but does not show up well in this photograph).



Fig. 2.—Case E. G. Acrodynia. Showing hemorrhage beneath skin of forefinger (left).



Fig. 3.—Case E. G. Acrodynia (1) Hemorrhage beneath tip of left forefinger; (2) patchy areas of redness on palm. These areas started a small reddish area then became larger and coalesced. They are present on both hands and both feet.

sweating and change in the temperature of the hands and feet, which may suggest some relation to the vegetative nervous system, and so, ad infinitum, almost every conceivable theory has at some time or other been advanced.

#### REPORT OF CASES

**CASE 1.**—E. G., girl, age 2. Admitted to University Hospital on June 21, 1930. Seven weeks prior to admission the toes showed a yellowish area around the nails of the large toes. Shortly the skin around all the toe nails became a bright red. Feet very cold; unable to get them warm. Patient well before this. Very irritable at the onset, very restless. At the end of two weeks tips of fingers and toes red. Rash, small red patches according to mother, appeared on abdomen which soon cleared up, but the other symptoms persisted. Marked

tony, as this happens so often in other diseases. To date we have nothing definite to prove that it is infectious, although the possibility still remains open.

The third theory is that of a disturbed

perspiration; clothes became soaked with perspiration day and night. Itching of hands and feet from the beginning. Temperature then about 100° to 102° F. Glands of neck visible. Appetite very poor from beginning. Patient seemed to squint as if light were unpleasant. Mother says that there has been considerable loss of hair. Examination on admission showed the following salient points: Dermographia present. Lips very red. Pharynx red, injected, and considerable gray mucus. Tonsils very large, red, and cryptic. Cervical lymph nodes on left side enlarged and tender. Fine papular rash, generalized. Tips of fingers and toes of an intense red color. Palms and soles present reddish areas of irregular size and shape which

the same as on admission. Ruptured vesicle on finger has not healed.

July 1. Feet and hands less red. Papular eruption has faded to a considerable degree. General condition better.

The feeding history of this child is interesting. Breast for 3 months followed by water-milk mixture. For a long time afterward child was fed largely on milk. Seven weeks before admission she was weaned from the bottle. At this time great difficulty was experienced in getting her to take solid food. Prior to that time she seemed to enjoy the milk, but would take little else. Never had cod liver oil, orange juice sometimes. Cereals only occasionally. During the past winter main article of diet was milk,



Fig 4—Case E. G. Acrodynia. Reddened area on calf of left leg, also ankle of right leg. They started out as a flat reddened area in the skin. Shortly afterward papules appeared.



Fig. 5—Case E. G. Acrodynia. Papular eruption on abdomen.

blanch on pressure. Similar area 1 in. in diameter on right thigh. Excessive perspiration. Marked pruritus of hands and feet. Very slight desquamation over palms and soles.

June 22. Papular eruption more marked, macular lesions have become larger. An extravasation of blood appeared beneath skin of tip of left forefinger, and became a large vesicle.

June 24 Throat condition subsiding. Cervical lymph nodes smaller. Patient less irritable.

June 25. Vesicle on finger has ruptured. Patient still very restless and irritable. Holds head down on chest. Pruritus still very marked. The skin manifestations and general condition showed an improvement with an improvement of her throat condition.

June 28. Lips dry and cracked. Ulcerations on inner side of lower lip. Right labia slightly larger than the left one. Skin and mucous membrane reddened. Considerable itching. Rash on abdomen entirely gone. Feet and hands about

1 to 1½ quarts daily, potatoes, peas occasionally. No green vegetables. Some fruits

June 20. Wassermann neg. R. B. C. 4,550,000 W. B. C. 17,200, hemo. 65 per cent, polys. 44 per cent, lymphos. 49 per cent, large monos. 3 per cent, basophiles 4 per cent.

June 26. Urine normal.

July 2. W.B.C. 20,000 with 50 per cent polys. Throat and nose cultures showed only normal flora. Therapeutic measures consisted of liquid diet when throat condition was at its height. Subsequently she was just on the ward diet with cod liver oil to supply vitamins A and D, vitavose to supply vitamin B, fruit juices for vitamin C. Was forced to take green vegetables and cereals.

Patient was discharged from hospital on the fourteenth day following admission. The whole picture gradually faded, and irritability decreased. During the month of October there was a re-

currence of some of the previous symptoms. It is interesting to note that at this time the child developed a so-called head cold, and tonsillitis. The redness of toes and fingers returned, irritability reappeared and a definite dislike for most of the articles of food developed. She was again returned to her normal diet and the symptoms gradually disappeared. To date there has not been any recurrence.

CASE 2 A G, age 3, sister of Case 1. During the month of July, 1930, child developed a cold, and extremities became cold, and reddened. Some irritability also appeared. These all faded within three weeks.

The feeding history of this patient is not as remarkable as that of her sister, although she always refused to take milk. Some milk was taken in the form of cocoa.

Two points stand out in these two cases. Both showed some history of sore throat in conjunction with the appearance of the symptoms of aerodynia; one patient showed a definite dietary disturbance.

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## GREENLAND HEALTH CONDITIONS

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Greenland is so isolated from the rest of the world by location, by climate, and by government regulation that a few observations upon its health conditions, fragmentary though they are, may be of passing interest.

It was the writer's privilege to spend a few weeks this summer in Godthaab, Holstensborg, and Julianehaab on the west coast of Greenland, and in Angmagssalik on the east coast, as a member of the Pan American Airway-Lindbergh Expedition. A few days were also spent in Iceland.

Though Greenland is the largest island on the globe, Australia excepted, only a very small area is habitable, the remaining eighty-six per cent being buried by the inland ice which in places reaches a thickness of 10,000 feet. That portion capable of sustaining life consists of a narrow mountainous coastal area one hundred miles wide at its widest part and entirely absent in places where the inland ice reaches and enters the sea as glaciers. Where a strip of land does exist it is cut up in a most confusing fashion by deep fjords passing from the inland ice to the sea. Such a terrain makes communication extremely difficult and at certain times and places practically impossible.

The Eskimo population is about 16,000 and there are about 300 Europeans, the latter mainly concerned with matters of administration. In the far north the

Eskimos exist as nomadic tribes but toward the south many live in or near the few small settlements maintained by the Gronlands Styrelse or Greenland Administration.

Greenland is a Danish colony and "the principal objects of the Danish Government in its dealings with Greenland rest upon the double basis of developing trade and improving the living conditions of the Greenlanders and bringing them into contact with the best of what civilization offers. The latter purpose has been so successfully attained that the Greenlanders may be regarded as among the few primitive peoples who not only have not succumbed to the detrimental influences of civilization but have made such progress that at no far distant time they will be able entirely to take care of themselves."

The above quotation defines the policy of the Gronlands Styrelse and in carrying out and enforcing this policy they have maintained strict regulations in regard to permitting foreigners or even their own people to enter the country. These rules are rigidly enforced and there are perhaps few if any other places in the world where a constant quarantine is so efficiently maintained.

Our inability to speak Danish made it impossible to obtain medical information in some places and so the major portion

of the following observations are based upon statements made by Doctors Kristensen and Svendsen of Godthaab.

Tuberculosis is very prevalent, affecting all ages and practically every tissue of the body except the skin. It is responsible for a large part of the surgery, in the treatment of tuberculous abscesses and ulcers, though appendectomies and herniotomies are performed from time to time.

The habitation of the primitive Eskimo—a small sod hut—is, of necessity, most unsanitary and doubtless has been instrumental in spreading tuberculous infection. The Gronlands Styrelse is very actively encouraging the building of modern and more sanitary wooden houses. Another important factor in the dissemination of tuberculosis is the habit of the older women, many of whom are tuberculous, to chew upon pieces of seal, walrus, or other meat in order to make them more tender and then to give them to the small children to eat.

In Godthaab there is a new hospital of thirty-five beds which they expect will soon be filled very largely with tuberculous patients, naturally to the exclusion of other patients.

Cancer is apparently extremely rare. Doctor Kristensen stated that he knew of but one case, that of a cancer of the uterine cervix.

Infantile paralysis is endemic with serious epidemics occurring from time to time and quite a number of crippled children are seen. The local physicians feel the need of more specialized orthopedic treatment than they can give but hesitate to send these paralysis victims to Copenhagen for such treatment because of the high mortality from tuberculosis among those who are sent to Denmark. The change of climate seems to change the latent into active cases.

Measles, scarlet fever, and diphtheria are unknown, but whooping cough exacts a mortality rate of close to 100 per cent in infants up to two years of age.

Uterine fibroids are neither common nor rare, and those which are discovered are usually small.

Typhoid and dysentery occur at times, and also influenza. During the winter when there is no communication with the outside world the general health is good with only a moderate number of cases of pneumonia but following the arrival of the first ships in the early summer there is a

marked increase in the number of cases of upper respiratory infection.

Labor is usually normal and few complications are encountered. Special stress is given to training the nurses in obstetrics so that they may act as midwives. The nurses, by the way, are Eskimo girls who go about their hospital duties clad in the customary seal skin pants and soft seal leather boots or kamiks. This native dress is also worn by the maids in the households of the government officials.

Gonorrheal infection is present but it was not spoken of as being unduly prevalent. Syphilis does not occur except in one district which has been under quarantine for thirty years.

The diet of the natives is almost wholly meat—seal, walrus, whale, reindeer, wild fowl, and fish. Bread is a great luxury and they may have a little sugar at times but practically never any fresh vegetables. In spite of this diet nephritis and cardiovascular conditions are unknown, as is also diabetes.

Among the Eskimos who live "native" on the diet above described dental caries never occurs but the women's teeth become sensitive by middle life because of being worn back to the gum line by chewing on seal and walrus hide to soften it in the making of boots.

Few Eskimos attain the age of seventy and old age pensions are granted to them, by the Danish Government, at the age of fifty-five whereas in Denmark the minimum age is sixty.

The life of the Greenland doctor is in no sense a sinecure as they have to cover several hundred miles of peculiarly difficult territory. Sick calls are brought to them by men in their kayaks—boats made of seal skin stretched over a wooden framework—and they follow back along the coast or up the fjords in a motor boat.

In Iceland the health problems seemed to be the same as those of any northern European country with the possible exception of leprosy. A leper hospital was erected in 1897 and soon filled with eighty patients. There are but eighteen patients now remaining, and there have been but very few admissions for several years past. Chaulmoogra oil is the treatment used.

Reykjavik, the capital of Iceland, has a thoroughly modern hospital, of one hundred beds, heated by water from one of the very numerous hot springs which abound in Iceland.

## PHYSICAL THERAPY IN THE CHRONIC INVALID

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The status of the chronically ill has become a serious problem to the physician and community, for statistics show that as the average duration of life increases, so does the proportion of the number of persons with chronic disease.

The mortality rate from infectious disease in recent years has been markedly decreased, but there has been a continuous increase of chronic diseases in those who have survived middle life.

Boas and Michelson<sup>1</sup> have emphasized that the problem of the chronically ill and chronic diseases is a definite challenge to the physicians and to social and health workers; and that these patients are regarded as useless derelicts rather than as patients who need medical attention.

Though a most important consideration must be given to many of these patients in the matter of hospitalization, nursing and home care, yet very much can be done by physical therapeutics.

A report on chronic diseases by the Department of Institutions and Agencies of New Jersey,<sup>2</sup> of 2,199 chronic patients in five representative counties gives some very interesting information. There was an increased number of males, 51.3 per cent, to females, 48.7 per cent, and 50 per cent of the most common chronic diseases were:

Cerebral hemorrhage* and other	
paralysis .....	17.4 per cent
Diseases of the heart.....	17.0 per cent
Arthritis and rheumatism.....	12.1 per cent
Malignancy .....	6.9 per cent

The survey discloses the important fact that contrary to customary belief, chronic disease is not mainly a problem of the later years of life, and showed that almost 20 per cent of the patients were less than 40 years of age, and 12 per cent between the ages of 16 and 39, and that of these 63 per cent were totally, and 37 per cent partially incapacitated.

The report concludes that by far the larger group is receiving insufficient care, and it presents a real obligation to the community. Lack of treatment facilities is responsible for retarding or eliminating recovery or improvement.

The chronic invalid goes through a very long, trying period, not only by the long duration of the illness and its effects on the patient, relatives and friends, but the lack of encouragement offered by medical consultants. There is an obligation to these patients, and much can be done for them. When a patient is termed "chronic invalid," it serves to discourage all hopes of the patient and effort at rehabilitation by the physician.

In the early stages of chronic illness, the patient is able to perform his duties, but later leads to more or less incapacity. Though there are no ultimate cures for these diseases, yet their progress may often be limited, patients made comfortable and given many years of satisfactory life.

These chronically ill are among the most difficult for physicians to treat because of the long duration of their ailments, but these victims need the medical advice, encouragement, and sympathy of the physician to help them carry on.

The value and effect of physical therapy on these patients depend essentially upon the concise understanding of the patient's condition and the proper indication and application of treatment.

Swain and Kuhns<sup>3</sup> state that the ideal of therapy in any disease is a restoration of anatomic structure and return of normal function; unfortunately, this is rarely obtained in arthritis (one of the examples of chronic disease). The slow onset of the disease, with extensive pathological changes before treatment is sought, makes the realization of such an ideal difficult.

Cure comes only by gradual improvement in general health and by increasing the resistance of the patient.

Dr. W. J. Monaghan<sup>4</sup> has said that too often it is assumed that these types of patients are incurable and beyond hope, when it is unquestionably a fact that many can be improved or even restored to such an extent that they can provide for themselves fully or in part.

We should recognize this responsibility and care of the chronically ill and help counteract the disastrous effect it leaves in the individual as well as his immediate family and on the community.

Many patients suffering from chronic

\* Cerebral hemorrhage has 96 per cent of the cases in age groups of 40 and over.

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sheet anchor of the chronic invalid for his future life.

It is obviously impossible to discuss here each of the physical therapy agents and their technic of administration, or to enumerate each of the chronic diseases in which physical therapy may be of value. There are many forms of physical therapy which are of especial advantage in the hands of some physical therapists, or in which certain distinct modalities are preferable to others. The importance lies only in the results attained.

Ultra-violet irradiation, both local and general, has a definite place in the treatment of certain chronic conditions because of its effect on the blood pictures with the increase of red blood cells, white blood cells, and hemoglobin, and other constituents of blood, including the activation of vitamin D and increase of body calcium and phosphorus. Many patients with diseases accompanied with cachexia, inanition, avitaminosis, secondary anemia (such as accompany extrapulmonary tuberculosis) will show marked benefit by general body irradiation over a period of from one to three months. The systematic application of ultra-violet rays will enhance the effects with the administration of iron in secondary anemia, and liver in pernicious anemia. It may be safely said that general body exposure to ultra-violet irradiations is indicated in all cases of chronic bone and joint diseases.

Locally, in the air-cooled, water-cooled, or cold quartz burners and electrodes we have an efficient means for the treatment of indolent ulcers of the skin or mucous membrane, recent draining sinuses, and decubitus, so common in chronic diseases of neurologic origin. These are also applicable to certain resistant chronic skin diseases. Ultra-violet irradiation is not well tolerated by the aged and advanced cardiac diseases, particularly with marked decompensation; also in neuroses; and in diseases with severe cachexia, inanition, diabetes mellitus, and such skin diseases as eczema, psoriasis, and lupus erythematosus.

Low-voltage currents in the form of galvanism, faradism, and sinusoidal, find a ready indication in paralyzed or paretic muscles, due to upper- or lower-neuron involvement or of traumatic origin. They give neurogenic nutrition and power of contractility to those muscles which may, or may not, undergo atrophy from disuse.

The tonus of muscles will be either maintained or increased by the simple contractions by the current and produce mild heat and increased metabolism.

In combination with other measures, it will influence the effect on paraplegia of myelitis, neuritis, peripheral vascular and vasomotor changes, and atony of the abdominal wall and intestinal tract. It should be avoided in myasthenia gravis, neuritis with acute exacerbation, and it should never be applied in the region of the precordium.

Static electricity has a very limited field in the treatment of chronic diseases, but is superior when used in combination with other modalities. In the form of static waves or sparks, it will exert a penetrating effect on the deeper tissues of the spine and lower extremities of tabetics, peripheral neuritis, periarticular tissues of chronic arthritis, or in those with fibrous union, myositis, and bursitis. Local static treatments should not be used in hypertensive cardiacs.

For the physical therapeutic treatment of chronic diseases, we rely especially on the important standard trio of physical therapeutic measures which are usually combined in their applications, namely, heat, massage, and exercise. Whatever objections there may be by medical men for instituting physical therapy, these three modalities are rarely ever interdicted. They lend themselves with advantage to the vast number of chronic diseases, and when given properly are almost free of all hazard.

Heat may be applied locally to the articular or periarticular diseases, neuritis, myositis, muscle spasm, and contractures. General body exposure to heat may be given in multiple arthritis, renal disease for elimination, neuroses, and many of the cerebrospinal cord diseases, especially those involving the pyramidal tracts. Heat should always precede massage and therapeutic exercise, as its application with relaxation, and increased blood supply will enhance their effect and increase the tolerance of the patient. Careful consideration must be given to those patients with sensory disturbances. The mode of heat application is extremely varied, and one makes his preference according to the best results he can obtain.

Hydrotherapy continues to be the favorite with many, regardless of the great

advance in the electrical apparatus, such as dry-air heaters, light cabinets, diathermia, and radiothermy. Tepid baths of 85° to 95° F. are useful in neuroses, myocarditis, nephritis, spastic or flaccid paralysis, paraplegias, with or without impairment of the sphincters, cerebrospinal cord tumors, multiple sclerosis, dystonias, and myotonias. It often gives results in the chronic cardiovascular diseases that are not too severely decompensated and may be administered with carbon dioxide or the simple modified Nauheim bath.

Massage is an important adjunct to other therapeutic measures in the diseases heretofore mentioned, but applied lightly for its sedative relaxation, firmly and deeply for stimulation.

Hot baths of 95° to 110° F. are indicated in chronic inflammation of the bones, joints and muscles, and are particularly well tolerated by, and greatly benefit, those patients with chronic multiple arthritis, both the proliferative and degenerative types. It not only permits greater mobility of the affected joints with less discomfort, but serves to minimize the development of contractures. For the same reasons and in addition for the relief of pain and crises, it may be administered often with gratifying results in manifestations resulting from cerebrospinal syphilis.

This treatment has the advantage in that it may easily be given daily and readily administered alike at home or in the institution.

The hydromassage by whirlpool bath is a simple method of local treatment to the upper or lower extremities for peripheral neuritis, extensive ulcerations, arthritis, vasomotor and sensory changes in spinal cord diseases, stumps in postoperative amputation, in some cases of peripheral vascular diseases, and in gangrenous and suppurating wounds of extremities.

Hot sitz baths are also given for sedative effect in conditions involving the genitals, lower pelvis, and rectum, including cystitis, urethritis, and prostatitis.

The deep-radiant lamp, 250 to 500 watts, for local use, and 1,500 watts for the more general application, also the heaters with luminous lamps, are the most convenient to use and are applicable in practically all conditions heretofore mentioned. Because of their sedation on nerve endings and their deeper penetration of superficial tissues, the radiant lamp is more generally used for local treatment for 15 to 45

minutes, or as in the condition of peripheral vascular diseases, a low degree of heat continuously. Entire-body exposure may be made in light cabinets with carbon filament lamps for diseases necessitating elimination, such as removal of urea, toxins, and metallic poisons as lead, arsenic, and mercury—or with tungsten filaments for their neurovascular effects.

The advent of the use of diathermia in physical therapy presents an effective agent for the application of heat to the very deep structures. It has added to our facilities and increased beneficial results in our treatment of chronic diseases.

Because it increases blood and lymph supply to the part and dilatation of the vessels, its sedative action on sensory and motor nerves, it produces relaxation, increased nutrition, and absorption of exudates. Locally it is efficacious wherever heat is indicated, as in arthritides, articular and periarticular, spinal cord diseases, neuritis and neuralgias, angina pectoris and coronary disease, ununited fractures, fibrous ankylosis, peripheral vascular diseases, synovitis, and myositis. In the form of autocondensation, it is palliative in all types of hypertension and may be the means of averting many cases of cerebral apoplexy. Excessive heat is not well tolerated in cardiac and pulmonary diseases and aged; also in peripheral vascular diseases, vasomotor and sensory paralysis, hypertension, aneurism and functional neurosis.

In massage, Ralph Pemberton<sup>6</sup> states that it usually has its chief application in respect to the various chronic conditions and diseases, and that its therapeutic effect is achieved slowly and repeatedly over a long period of time. It is given to maintain, improve, and correct errors in physiological functions in the soft tissues.

Besides its sedative effect on spastic muscles, it causes relaxation to these contracted tissues as well, and it may prevent or overcome impending contractures in many diseases of the cerebrospinal cord, peripheral nerves, and joints.

For sedative effect, to reduce spasm, the light form of effleurage is necessary, but the deeper and stronger petrissage is essential in arthritis and beginning contractures. In edema from renal and cardiac disease and vasomotor disturbances, it is an important adjuvant therapy. Effleurage and petrissage are both applied to empty the superficial and deeper tissues.



As many of the chronically ill patients are confined to a sedentary existence, massage is the substitute for the activity to which they at one time have been accustomed. One of the purposes of massage is to prepare these patients for therapeutic exercises. Massage is to be avoided in phlebitis and thrombosis, chronic ulcerative colitis, purulent infections (osteomyelitis).

Exercises are usually first given in conjunction with thermotherapy and massage in the form of passive, assistive and resistive movements, and finally the active exercises which are so essential for some degree of restitution. The early movements are performed by and with the attendant who should have a thorough knowledge of the movements of each joint. This will prepare the muscles for future voluntary activity, increase mobility, prevent contractures, and counteract deformities.

Burbank suggests small amounts of exercise, either active or passive, frequently taken, to be more beneficial than any large amount at one time. Moderation of massage and exercise and physical therapy (heat) is advisable, as trauma is to be avoided. Should the joints become more painful one half to one hour after the exercise is concluded, there has been traumatization, and the amount should be decreased until such increase of discomfort no longer follows exercise or massage. Most of the chronic cases have a low metabolic rate (unlike the acute, which have an increased metabolic rate). This may be increased by massage and exercise.

These exercises may be first given in bed and the early active exercises to the upper extremities given to these patients in the wheel chair. Following this, the patient may be supported on walking chair or crutches and begin the rudimentary action of standing and walking. The necessity of proper instructions in standing and walking is essential, as they will tend to make any form of movement though ungainly, that will require the least effort in propulsion. In institutions with mechanotherapy equipment, there is the advantage in having a class of patients performing exercises which keep their keenness and interest maintained.

Reeducation of muscles for physical exercises is necessary for developing neuromuscular coordination. Jones<sup>8</sup> postulates that weak muscles (usually much relaxed) are never restored when under continuous strain, as in wrist or foot drop. It is there-

fore important that the weak muscles are put to work or exercise with relaxation to the antagonistic contracted muscles. Muscular reeducation entails proper instruction by the attendant and consistent practice by the patient.

Prolonged exercises are to be avoided, as patients with chronic diseases are readily exhausted with a tendency to nervousness and excitement. Strenuous exercises are also to be guarded against in overstretched muscles.

**CORRELATION OF MEDICAL SURGERY AND PHYSICAL THERAPY TREATMENTS**—In writing his work on physical therapy regarding pathological conditions Gringer<sup>6</sup> stresses the importance of keeping in mind that all physical measures are only a part of the triad—medicine, surgery and physical therapy. In the main, physical therapy is used as an adjunct to ensure functional restoration. It should only be prescribed after a careful examination has been made, both physical and laboratory, and all etiological factors sought, and if found eliminated. Proper medical and surgical procedures should go hand in hand with physical therapy treatment. It is only by combination of methods that success is obtained.

In many conditions, physical therapy should be preceded by such surgical or manipulative measures as will put the parts in correct position for function. Orthopedic conditions after operation would often be void of satisfactory results if followed by inadequate physical therapy.

Only too often patients have been referred that appeared hopeless for therapy, many who had a variable number of diseases or disabilities but continuous effort, had wrought a better and happier individual.

Sampson<sup>9</sup> states this clearly, in that a very heavy responsibility rests upon the shoulder of any medical man who assumes to condemn physical therapy remedies without proper trial or without the most painstaking and careful study.

Not only is he denying his patients any benefit that might accrue from an intelligent use of these remedies under trained medical supervision, and by his example causing numerous other medical men, who look to him for guidance, to do the same thing, but he is handing over to the irregulars (cults and charlatans) the most valuable section of the therapy field and

practically forcing all patients who need and desire physical treatment to resort to these forces to obtain it.

These patients are intelligent enough to prefer receiving physical treatment from medical men, but where this is not possible, they have no hesitancy in seeking it elsewhere.

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GUN HILL ROAD, NEAR JEROME AVE.

#### THIS AND THAT

The universal tendency to make the long-suffering doctor the "goat" is illustrated again by a correspondent of the *New York Times*. As he relates, a proposition to use CWA funds to pay doctors to examine school children for a defect found among them in alarming proportions was considered favorably, and the ground-work was laid for its completion. Suddenly there was a cessation of activity. Someone had learned his lesson in municipal economies. The doctor never complains: then why pay him for such work?

The result is that school children are being sent by teachers and social workers to the clinics in ever-increasing numbers to be examined for this defect. The doctor again is left playing the goat!

A western medical paper tells of a mother who gave her daughter a book telling "What Every Young Girl Should Know," and daughter wrote to the author suggesting a couple of dozen corrections and the addition of two new chapters.

General practitioners in some parts of the country, according to a speaker at a medical meeting in Milwaukee, are making a strong appeal to those in special fields of surgery to have a standard of fees adopted which would make it possible for the general man to collect for his services. These services include not only his diagnosis and valuable advice for surgery, but also transportation of the patient, after-care, and all services except those which go on in the operating room. Were such a standard adopted the general man would no longer be considered a mere on-looker in the case, for the patient would never lose sight of the importance of his position. Such a standardization would tend to do away with the evils of fee-splitting.

The ideals of Osler are presented in a quotation in the *Canadian Medical Association Journal*, as follows:

"I have had three personal ideals. One to do the day's work well and not to bother about tomorrow. It has been urged that this is not a satisfactory ideal. It is; and there is not one which the student can carry with him into practice with greater effort. To it, more than anything else, I owe whatever success I have had

—to this power of settling down to the day's work and trying to do it to the best of one's ability and letting the future take care of itself. The second ideal has been to act the Golden Rule as far as in me lay, toward my professional brethren and toward the patients committed to my care. And the third has been to cultivate such a measure of equanimity as would enable me to bear success with humility, the affection of my friends without price, and to be ready when the day of sorrow and grief came to meet it with courage befitting a man."

Fewer accidental deaths of children in the home and on the streets are noted by the Metropolitan Life Insurance Company, which credits this encouraging fact to the teachings of the safety education campaigns conducted in the schools. In the past nine years the death rate among boys and girls under 15 years from home accidents has declined nearly 23 per cent. But among the older persons, from age 15 onward, the death rate from home accidents rose nearly 42 per cent from 1923 to 1932, and in the latter year it was the highest on record. Is the home, then, a more hazardous place for grown-ups than for children? Not necessarily. The increased number of adults, we are told, killed in domestic accidents may be a reflection of the business slump which has forced large numbers of persons to remain at home, who, in normal times, would be employed elsewhere during a large part of the day.

The theory that evolution is on the back track, and that man is on his way to being a monkey again, has been supported hitherto mainly by the monkeyshines of certain persons who wish to be prominent in the public eye. Now word comes from London that a baby has been born in the Metropolitan Hospital with a tail. It is "about two inches long, tapers to the point, and is curly and, normally sensitive." The tail is growing, and, on the whole, doing as well as could be expected. Of course, there may be others about that have been kept under cover and not reported, and might prove useful in hanging from a window in case of fire, or come in handy in many ways. Further evidences of evolutionary reversal should be watched for with special care from now on.

## A STUDY OF SECONDARY CASES OF SCARLET FEVER

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A previous study of 11,357 cases of scarlet fever occurring in the City of New York during 1931, a year in which the incidence of scarlet fever was approximately normal, revealed that about 8 per cent of the cases were secondary cases, with 2.4 per cent of the 37,788 contacts developing scarlet fever. An analysis of the data gave the impression that the majority of uncomplicated cases are very slightly, if at all, infective after the 21st day, only 4 per cent of the secondary cases having developed subsequent to the 21st day after the onset of the primary case. In the complicated cases, however, the secondary cases arising after the 21st day were materially higher, 18 per cent of the secondary cases to complicated scarlet fever developing later than the 21st day.\*

As a result of this study, the conclusion was drawn that scarlet fever cases after a careful examination to rule out the presence of a complication (discharging ear, mastoid, nose, enlarged glands) could be terminated on the 21st day, irrespective of desquamation, with little or no danger of causing secondary cases.

Accordingly, the Borough of Brooklyn was chosen as a test, and regulations were drawn up permitting termination and discharge of all uncomplicated scarlet fever cases on the 21st day. These regulations went into effect July 1st, 1932. The remaining four boroughs of the city continued to hold uncomplicated cases until the 30th day, in accordance with the regulations already in force. The termination of complicated cases remained the same throughout the city, that is, until the complication had cleared up.

The present study is an analysis of the data after sufficient time has elapsed to determine whether the conclusions arrived at previously could be substantiated.

In Brooklyn, from July 1st, 1932, to October 31st, 1933, a period of 16 months, there were 2,602 primary uncomplicated cases, which gave rise to 243 secondary cases, or 8.5 per cent secondary cases. In the control boroughs, there were 5,810 primary uncomplicated cases, and 598

secondary cases, or 9.3 per cent secondary cases. The secondary cases in this study were slightly higher than in the previous study, in which the percentage was 7.8.

In Brooklyn, to the 2,602 primary cases, there were 9,410 susceptibles, and of these 9,410 susceptibles, 243, or 2.6 per cent, developed the disease. In the control boroughs, to the 5,810 cases there were 22,105 susceptibles, and of these 598, or 2.7 per cent, developed the disease. It is interesting to note that the percentage of susceptible contacts later coming down with scarlet fever was but very slightly higher than in the 1931 study (in which it was 2.4 per cent), and that the Borough of Brooklyn made a better showing than the control boroughs.

While the percentage of primary cases causing secondary cases and the percentage of susceptible contacts developing secondary cases gives a very satisfactory showing for Brooklyn compared with the control boroughs, if a study is made of the time intervals in which the secondary cases developed after the onset of the primary case, another phase of the subject presents itself. For this purpose, a tabulation was made at 5 day intervals showing the number of secondary cases arising in each period during the primary case.

It will be seen from Table III that the number of secondary cases developing in Brooklyn in the 27- to 30-day period, and in the 31- to 37 day period was higher than in the control boroughs and also higher than in the previous study. The cases that developed in the 27- to 30 day period were probably infected (allowing for the incubation period) between the 22nd and 26th days, while the secondary cases that developed in the 31- to 37-day period were probably infected between the 27th and 30th days. Therefore, with 7.3 per cent of the secondary cases developing in Brooklyn as against 4.1 per cent in the control boroughs between the 27th and 37th days, it would seem that the difference, or 3.2 per cent, might be charged to the release of the primary cases on the 21st day. The conclusion to be drawn from this is that there may be a certain small percentage of

\* *N. Y. State Jour. Med.*, Vol. 33, No. 14.

scarlet fever cases still infective after the 21st day.

In order to translate this 3.2 per cent increase between the 27- to 37-day period in Brooklyn over the control boroughs into actual cases, it would mean that 7.5 secondary cases developed as a result of the 21-day isolation period.\* Therefore, by releasing 2,602 primary uncomplicated cases in the Borough of Brooklyn on the

the secondary cases that might develop through contact outside the immediate family. If, however, there were a marked increase in extra-household secondary cases due to the 21-day isolation period, this should manifest itself in an increase in the attack rate in the school population of Brooklyn, as compared with that of the control boroughs. This we do not find.

Comparing the attack rates (Table IV)

TABLE I

1931 City total			1932-1933 Brooklyn			1932-1933 Rest of City		
Cases	Secondary cases	Per cent	Cases	Secondary cases	Per cent	Cases	Secondary cases	Per cent
11,357	901	7.8	2,845	243	8.5	6,408	598	9.3

TABLE II

1931 City total			1932-1933 Brooklyn			1932-1933 Rest of City		
Susceptibles	Secondary cases	Per cent	Susceptibles	Secondary cases	Per cent	Susceptibles	Secondary cases	Per cent
37,788	901	2.4	9,410,	243	2.6	22,105	598	2.7

TABLE III

	1931 City total		1932-1933 Brooklyn		1932-1933 Rest of City	
	Cases	Per cent	Cases	Per cent	Cases	Per cent
Less than 7 days.....	479	56	128	52.7	327	54.7
7-11 days .....	167	20	50	20.5	107	17.9
12-16 days .....	111	13	30	12.3	75	12.5
17-21 days .....	58	07	11	04.5	47	07.8
22-26 days .....	19	02	6	02.5	17	02.8
27-30 days .....	8	01	7	02.8	8	01.3
31-37 days .....	8	01	11	04.5	17	02.8
Total .....	850		243		598	

21st day, 7.5 more cases developed than if isolation had been maintained for the 30-day period, or, for every 1,000 primary uncomplicated cases of scarlet fever there would be an increase of approximately 3 cases (2.88 to be exact). Our 10-year average of scarlet fever from 1923 to 1932, inclusive, was 11,090, of which approximately 92 per cent were primary cases, and on this basis with a 21-day isolation period established for the entire city we might expect 29 additional cases annually.

Upon release from isolation the majority of scarlet fever cases return to school and come in contact with susceptibles outside of the household. Our statistics are, of course, based on secondary cases arising in the immediate household, as there is no way of determining with any exactness

TABLE IV

	School pop. 5 to 14	Cases 5 to 14	Attack rate per 1,000 pop.
1931			
Brooklyn .....	422,397	2250	5.33
Manhattan .....	229,978	1488	6.47
Bronx .....	193,819	2898	14.95
Queens .....	163,048	1372	8.41
Richmond .....	27,722	147	5.30
City .....	1,036,964	8155	7.86
July 1, 1932 to Oct. 31, 1933			
Brooklyn .....	418,774	1935	4.62
Manhattan .....	221,274	1159	5.24
Bronx .....	192,238	1171	6.09
Queens .....	166,983	1126	6.74
Richmond .....	27,843	252	9.05
City .....	1,027,112	5643	5.49

of the various boroughs for the periods of both studies, it is noted that the attack rate in Brooklyn was as low or lower than any of the boroughs during the period of the two studies. It is interesting to note that while Bronx had a high attack rate during the period of the first study, the

\* 243 secondary cases is 3.2 per cent more than we should have had, hence 243 equals 103.2 per cent, or 235.5 cases, which, we assume, would have been the number of secondary cases with a 30-day isolation period.

attack rate was about average during the second study, and while the attack rate in Richmond was the lowest during the period of the first study, it was the highest during the period of the second study. This is consistent with the variation in susceptibility in a community from year to year, and hence it might be expected that with an attack rate (5.33) considerably below the average (7.86) in Brooklyn during the period of the first study, we might normally expect an increase above the average in the attack rate in Brooklyn for the period of the second study. However, we find the reverse is true, that is, in Brooklyn with a 21 day isolation for the 16 month period, the attack rate is lower than in the same borough with a 30 day isolation period for the 12 months of 1931, and also lower than the other boroughs with a 30 day isolation period.

If the release of cases of scarlet fever on the 21st day and the resumption of their normal activities caused an appreciable number of additional cases in this most susceptible age group, it should show in the attack rates, hence, it would seem that with the lowest attack rate in Brooklyn during the period of 21-day isolation, there was not enough contagium present after the 21st day to cause sufficient additional cases to increase the attack rate above that with a 30 day isolation period.

# SUMMARY

(1) There was a lower percentage of secondary cases of scarlet fever with a 21-day isolation period than with a 30 day isolation period.

(2) Approximately the same percentage of susceptible contacts developed the disease in the 21-day isolation group as in the 30 day isolation group.

(3) There was an increase in the ratio of secondary cases developing after the 21st day to the total number of secondary cases in comparing the 21 day isolation with the 30 day isolation group. This increase would amount to approximately three cases for every 1,000 cases.

(4) The attack rates for the various boroughs for 1931 and for the period of the present study do not show that any appreciable increase resulted from a 21-day isolation period.

(5) Three additional scarlet fever cases per 1,000 do not seem to warrant an additional 9,000 days' isolation—the difference in isolation time per 1,000 cases between a 21-day and a 30 day isolation period—or in an average year, 90,000 days additional isolation.

1198 BUSHWICK AVE., B'KLYN

## Philadelphia Academy of Surgery THE SAMUEL D GROSS PRIZE FIFTEEN HUNDRED DOLLARS

ESSAYS WILL BE RECEIVED IN COMPETITION FOR  
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The conditions annexed by the testator are that the prize shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo in length illustrative of some subject in Surgical Pathology or Surgical Practice founded upon original investigations, the candidates for the prize to be American citizens.

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that the essay was awarded the Samuel D Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language should be sent to the Trustees of the Samuel D Gross Prize of the Philadelphia Academy of Surgery, care of

the College of Physicians, 19 S 22d St, Philadelphia, on or before January 1, 1935.

Each essay must be typewritten distinguished by a motto and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

WILLIAM J TAYLOR M.D.,  
EDWARD B HODGL, M.D.,  
JOHN H GIBBON, M.D.,  
Trustees

Philadelphia April 15, 1934

## HYPERTENSION AND NEPHRITIS

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Because of the considerable change in recent years of our understanding of nephritis and hypertension, this discussion will consider the recent developments particularly where they have radically changed our former views on both diagnosis and treatment.

Minimal nephritis is relatively common, being present in most individuals over forty years of age. It may also accompany many conditions, such as acute and chronic infections, arteriosclerosis, heart disease, and certain poisonings. This damage, however, is usually not of a degree to cause impairment of kidney function, and because of lack of symptoms it is often overlooked. Chronic Bright's disease frequently accompanies some other condition which is the chief cause of symptoms and finally is the cause of death; hence, as a primary diagnosis it is surprisingly uncommon. At the Syracuse University Hospital a review of 699 cases from the Medical Department revealed only 4 instances of chronic nephritis as a primary diagnosis, while pernicious anemia, for example, occurred in 12 cases. Well-established Bright's disease is often overlooked, especially those types which do not show albuminuria or edema. It is also a frequent error to diagnose nephritis when it is either absent or of a degree insufficient to cause symptoms or death. These errors are due in great part to the common impression that the diagnosis of Bright's disease is largely dependent on the presence or absence of albuminuria, edema, or hypertension. These symptoms may be present in individuals with normal kidney function, and conversely they may be absent at times when a severe grade of nephritis exists.

While *albuminuria* is usually present at some stage in all cases of Bright's disease, it is not of itself diagnostic of nephritis. The error is often made of accepting all albumin and sediment present in the urine as coming from the kidneys. They may be due to blood, pus, or mucus from sources other than renal. This error can be overcome by examining fresh catheterized specimens especially in women. Congestive heart failure is often accompanied by

marked albuminuria and probably explains the term *cardiorenal* disease. It usually clears with the return of compensation. A decompensated heart is at times overlooked and neglected, because the albuminuria and edema present are regarded as being due to nephritis. Benign albuminuria occurs rather commonly, in 6 to 30 per cent of healthy children<sup>1</sup> and in 5 per cent of robust young men.<sup>2</sup> In children it is often of the so-called *orthostatic* type. On the other hand persistent albuminuria in young adults may be due to a latent or quiescent phase of chronic Bright's disease. The presence of albuminuria should always be an indication to make a careful study of the urinary sediment and to carry out the various kidney function tests before deciding whether or not nephritis is present.

*Edema* is commonly looked upon as the sign par excellence of Bright's disease, yet it is much more commonly caused by circulatory failure. Edema is also present at times in the anemias, myxedema and in certain nutritional disturbances. The edema that occurs late in the dry type of chronic nephritis is often due to the development of cardiac failure. True renal edema is usually associated with severe albuminuria which has brought about a marked lowering of the serum albumin. Recent experimental work<sup>3, 4</sup> indicates that renal edema is closely related to this depletion of the serum albumin. It has been demonstrated that if the plasma protein is lowered to a figure below 4 per cent, or the serum albumin to below 1 per cent, then edema will make its appearance and will clear when they are restored to their normal level. The relationship of the plasma colloid osmotic pressure to edema has recently been reported.<sup>50</sup>

The microscopic examination of the urine and certain kidney function tests yield the most dependable evidence regarding the presence or absence of Bright's disease. Considerable error often enters into the microscopic study of the urinary sediment because of lack of care in obtaining the specimen. Addis<sup>5</sup> has stressed the point, that casts and red blood cells quickly

disappear from urine that is alkaline or of low specific gravity, or that is not fresh. He advises the examination of a *fresh* specimen obtained after twelve hours of a dry diet and the withholding of fluids to insure both acidity and concentration. The common practice in both office and hospital of examining urine specimens several hours after collection is open to error and should be corrected. The presence or absence of red blood cells and the type of casts present are important. It must always be kept in mind that an occasional hyaline cast and red or white blood cell may be present in normal urine<sup>6</sup> and that they may be increased during congestive heart failure.<sup>7</sup> The type of cast present is an indication of the degree of pathologic activity in the kidney; the coarsely granular cast indicates considerable activity, next comes the finely granular, and then the hyaline cast indicating the least activity. Addis has called attention to the wide brown casts seen in the terminal stages of nephritis.<sup>8</sup>

The important methods for the measurement of renal function are the concentration and dilution or Mosenthal test, the phenolsulphonaphthalein dye test and the estimation of urea or the total nonprotein nitrogen in the blood. The concentration and dilution test is probably the most sensitive. It reveals early signs of diminished renal function by an increase in the night urine and by gradual failure to concentrate. The dye test is next in sensitiveness; and the commonly used estimation of the blood urea or nonprotein nitrogen is the least sensitive usually showing an increase only after the dye excretion has dropped to a very low level.<sup>9</sup> The concentration test which is the most valuable can be easily carried out in the office or home with no special equipment other than a graduate and urinometer. The urea clearance test<sup>10</sup> is considered by some to be the most sensitive and reliable measurement of kidney function. However, as yet it has not come into general use and further trials will be necessary to establish its true value. During congestive heart failure all the renal function tests may give false abnormal findings and they should be repeated when compensation has been attained. Another test of value in diagnosis and particularly in treatment is the estimation of the plasma protein. Marked decrease is noted in nephrosis and the nephrotic types of

chronic nephritis. It should be emphasized as in any laboratory procedure that tests giving abnormal findings should always be repeated one or more times before accepting the evidence as significant.

Diminished output of urine under certain conditions, such as acute infections and after surgery, is often looked upon as evidence of impaired kidney function. If albuminuria and edema are absent it is much more likely to be due to inadequate intake or abnormal loss or storage of water. It is not generally appreciated the large amount of water that may be lost each day through the skin and lungs. Because of the fact that probably 60 per cent of the water intake each day comes from food, it is easy to see that under conditions where solid food is cut off, the water intake may become inadequate and little or no urine be excreted. DuBois<sup>11</sup> has called attention to this situation and points out the necessity of proportionally increasing the fluid intake under these conditions so that the water intake will be at a level necessary for normal body functions. It should also be kept in mind that little or no urine will be excreted during periods of circulatory collapse despite normal kidneys. Diminished excretion of urine in the absence of albuminuria is likely to be of extrarenal origin if the concentrating power of the kidney is found to be unimpaired.

There are numerous classifications of Bright's disease most of which are on an anatomic basis although some are founded on clinical and laboratory evidence. The many classifications of nephritis are a source of considerable confusion to many students and practitioners especially the correlation of one classification with another. Also it is often puzzling to have the necropsy findings fail to confirm the anatomic changes suspected from the clinical course during life. This in part is due to the fact that the kidney ultimately found at autopsy reveals the terminal stage of the disease when the damage is not confined to any one component but involves not only the glomeruli but also the tubules, interstitial tissue and the blood vessels. The most simple classification of nephritis would be to limit it to the acute and chronic variety. However, it is of interest and of help in prognosis and treatment to subdivide the chronic form. The oldest classification in use at the present time is

that which divides chronic nephritis into the parenchymatous and the interstitial types. In 1914, Vollhard and Fahr<sup>12</sup> presented their classification which divides chronic Bright's disease into the degenerative or nephrotic, the inflammatory or glomerular, and the arteriosclerotic or hypertensive. Christian<sup>13</sup> on a clinical basis in 1925 divided chronic nephritis into that form with edema, and that form without edema. This classification is relatively easy to apply because it is based on signs and symptoms present during life. The most recent classification of Bright's disease is that of Addis<sup>5</sup> which is based upon the findings in the urinary sediment. With a special technique the number of casts, red and white blood cells are estimated for a 12-hour period and according to the findings the case is grouped as one of hemorrhagic, degenerative, or arteriosclerotic Bright's disease. He believes that the hemorrhagic form has its beginning with some cute infection notably tonsillitis and gradually evolves through the initial, latent, active and finally the terminal stage.

It is obvious that certain terms in each of these different classifications must represent the same or a similar clinical and pathologic picture. Therefore, for purposes of correlation and simplicity the terms parenchymatous nephritis, glomerulonephritis, diffuse nephritis, nephrosis, hemorrhagic and degenerative Bright's disease, and chronic nephritis with edema may be said to represent the same variety of nephropathy. This type is more often seen in the young age group; it may occur in an acute, subacute, or chronic form. The pathologic lesion is an inflammatory and degenerative process in the glomeruli and tubules. Albuminuria and edema are striking features. The urinary sediment reveals many casts and many red and white blood cells. Hypertension and abnormal response to the renal function tests do not occur until late, when considerable contraction of the kidney may develop. When the disease is recognized these patients usually live but a few years.

In like manner the terms interstitial nephritis, hypertensive or arteriosclerotic nephritis, nephrosclerosis, arteriosclerotic Bright's disease, and chronic nephritis without edema may be looked upon as synonymous. They designate a type of Bright's disease occurring more commonly after forty years of age, usually chronic in

form and extending often over a period of many years. The primary anatomic change is in the arterioles, interfering with the nutrition of the glomeruli and tubules and ultimately leading to destruction of these units. Hypertension and nocturia are prominent characteristics, and no edema is present until late when it may appear on a cardiac basis. There is usually little or no albuminuria and the urinary sediment reveals almost no casts or red blood cells. There is evidence of impaired kidney function as gauged by the response to the various renal function tests. If all patients suffering from hypertension and generalized vascular disease are placed in this group as they commonly are, then in only about 10 per cent is there serious impairment of kidney function or death from uremia; the renal damage is minimal and vascular changes in the heart and brain progress at a more rapid rate causing death long before kidney insufficiency sets in. Because of these important facts it would be much more satisfactory, particularly in prognosis and treatment, to place this large group with minimal renal damage under some other term such as vascular or essential hypertension and designate as having nephritis only those cases exhibiting definite impairment of kidney function.

*Nephrosis* is a rare form of nephropathy, occurring in children and young adults; it is considered by many not to be a true nephritis. It is characterized by marked albuminuria and massive edema which seems to disappear and reappear without any apparent reason. There is normal response to all kidney function tests, doubly refractile lipoid bodies appear in the urine, the blood cholesterol is elevated, and at times the basal metabolism is lowered. There is no tendency to hypertension or retinal changes, and no red blood cells appear in the urine. There is pronounced lowering of the plasma protein and serum albumin due to the marked loss of albumin in the urine. The important pathologic finding is an extensive degenerative change in the tubular epithelium. Few cases ever completely recover.

The *eyegrounds* of patients who have hypertension or nephritis reveal certain changes which are of great help in diagnosis, prognosis and in treatment. These findings in the retina are now looked upon as being due primarily to hypertension and



vascular changes rather than to pathology in the kidney.<sup>14</sup> These eyeground findings may be divided into two groups, the benign or arteriosclerotic, and the malignant or neuroretinitis. The arteriosclerotic form consists of irregular, tortuous, narrowed vessels, with compression of the veins at arterial crossings, also hemorrhages and hard white spots. This is the common and benign form; only about one-third<sup>14</sup> of this group exhibit any impairment of renal function. Its presence is not so much an evidence of nephritis as of generalized vascular disease, particularly in the brain.<sup>15</sup> Death usually results from cardiac or cerebral vascular disease. The malignant or neuroretinitis form is characterized chiefly by edema of the disk and retina with the stellate figure at the macula, the snow-bank exudate and the cotton-wool patches. This type is not so common and is of much more serious importance, 90 per cent dying within two years, and 70 per cent having serious impairment of kidney function.<sup>14</sup> Patients who exhibit this form of retinopathy are said to have malignant hypertension. The commonly used term "albuminuric retinitis" is inappropriate and misleading and is being discarded rightly. It has no relation to albuminuria. It is often present when albuminuria is absent, and it is usually lacking when severe albuminuria exists.

*Hypertension* is commonly looked upon as an indication of Bright's disease while, as a matter of fact, only a small percentage of individuals with high blood pressure ever show any significant impairment of renal function. In the past, too much stress has been placed on the kidney as a cause of hypertension. The renal lesion is more likely a result rather than a cause of the high blood pressure. The method of making blood pressure estimations is important. Because of the transitory elevation of blood pressure due to increased nerve tension one must be cautious in accepting the first reading made as an indication of the patient's usual blood pressure. Many patients are labeled as having hypertension because of failure to appreciate the effect of nervousness on vasomotor tonus. To overcome this error an effort should be made to obtain a complete relaxation of the patient, and at least three readings should be taken. Often when the first reading is substantially elevated the third will be within normal limits. The old rule that

the normal blood pressure is 100 plus the age has been discarded. Symonds<sup>16</sup> in a large series of normal individuals found that for all ages the average systolic pressure does not exceed 135 and the diastolic 90 mm. of mercury. A persistently high diastolic pressure is looked upon as much more serious than a high systolic pressure. Despite an enormous amount of investigation the etiology of hypertension except for the 10 per cent on a renal basis, is at present unknown. The earliest sign noted in the development of hypertension is a tendency for the blood pressure to fluctuate above normal, due apparently to a transient increase in vasomotor tonus. Later this temporary elevation becomes permanent and the pressure remains fixed at a level above normal; sclerotic changes gradually appear in the arterioles throughout the body. This arteriolar change after a time seems to become more extensive or to focus in certain organs such as the heart, brain, or kidney. Finally, failure of one of these vital organs occurs and the patient dies of heart disease, apoplexy, or uremia. In some instances the vascular process will not be general but will be found to be sharply localized to one organ or structure. The vast majority of individuals with hypertension never develop impairment of kidney function and only 4 to 10 per cent die of renal failure. This fact is not as generally appreciated as its significance warrants and the former conception of the renal origin of hypertension still influences both diagnosis and treatment. Bell and Clawson's<sup>17</sup> report of 420 patients with hypertension, revealed death due to heart failure in 45 per cent, coronary involvement in 16 per cent, apoplexy in 20 per cent, renal failure in 8 per cent, and other causes in 12 per cent. Christian's<sup>18</sup> series of 131 cases shows death to be due to cardiac failure in 32 per cent, cerebral accident in 25 per cent and uremia or severe renal disease in 4.5 per cent. In a series of 100 cases of hypertension coming to autopsy Scott<sup>19</sup> found as the cause of death myocardial failure in 68 per cent, cerebral accident in 22 per cent, and renal failure in 10 per cent.

In the *treatment of Bright's disease* one should first consider what particular functions of the kidney are impaired and then devise a plan of therapy that will put as little call as possible upon them. The renal

function tests will indicate the manner in which kidney activity is impaired whether it be in the excretion of salt, water, or protein metabolites. As drugs are unfortunately of little help, treatment resolves itself into the maintenance of proper nutrition guarding against deficiencies in calories, protein, minerals, and vitamins. This is important because it has been shown that undernutrition increases the severity of the renal lesion.<sup>20</sup> Failure to maintain proper nutrition is a common error in the treatment of nephritis and this is most strikingly exemplified in the management of the protein intake. The presence of nephritis, hypertension, albuminuria or edema is commonly looked upon as an indication to withhold the much maligned meats and other protein foods. This régime is often followed by the development of lack of endurance, anemia, and other evidences of disturbed nutrition due to protein starvation. These symptoms are often looked upon as being due to the disease but they quickly clear upon the return to a normal well-balanced diet. The fact that there is certain minimal amount of protein necessary each day to prevent depletion of the body store of protein is completely lost sight of. It is usually considered that the minimum amount of protein on which a person can remain in nitrogen equilibrium is about 0.5 to 0.7 gm. per kilo,<sup>21</sup> and no patient should be restricted below this figure except for a brief period. McCann and Keutmann<sup>22</sup> gave patients with active hemorrhagic Bright's disease diets containing 75 to 200 gm. of protein a day without adverse effects. The important indications for restriction of protein are not albuminuria, high blood pressure, or edema, but definite evidence of difficulty in excreting protein metabolites, as shown by the elevation of the blood urea or nonprotein nitrogen and failure of the kidney to concentrate to at least 1020. When these criteria are lacking a normal protein intake should be allowed and when restriction is indicated it should not be below the minimal figure. The old idea that red meats were more harmful than white meats and that animal protein was more harmful than vegetable protein has been discarded; all proteins are the same to the kidney. When considerable albumin is lost in the urine each day and the plasma protein is lowered to below 4 per cent a protein intake of 150 to 200 gm. may be necessary. High protein diets are not permissi-

ble if there is inability to concentrate or an increase in the blood urea or nonprotein nitrogen is present. Hence it becomes evident that in some cases of Bright's disease a normal protein intake should be allowed; in others it should be restricted, and in still others it should be increased. In chronic nephritis without edema the normal daily intake of fluids must be increased because the kidneys can only eliminate solids in a very dilute solution. Hence, considerable water is needed to perform their work, and for similar reasons these patients should not be treated with hot packs as is commonly the case especially in uremia. Diuretics have no place in the treatment of nephritis, except when edema is present, and here the acid types of diuretics<sup>23</sup> are often efficacious, together with the limitation of the intake of salt and water. An effective method at times of initiating the excretion of urine in patients with anuria due to nephritis is the intravenous administration of a 20 to 30 per cent glucose solution. Patients with acute nephritis should be thoroughly investigated for foci of infection particularly in the tonsils. If these foci are found they should be eradicated but only after the acute process has subsided. In the treatment of the albuminurias incident to pregnancy and acute infections there is no justification for the restriction of the protein intake unless impaired renal function can be demonstrated. The convulsion and other nonuremic cerebral manifestations of glomerulonephritis and hypertension can best be treated by lumbar puncture to relieve the increased intracranial pressure and by depleting the cerebral edema with hypertonic solutions, particularly magnesium sulphate.<sup>24</sup>

The treatment of patients with hypertension is often severe, harmful and to no point. Protein restriction is commonly prescribed without the slightest evidence of impaired kidney function. All that has been said here regarding the protein intake in nephritis applies to hypertension, and with greater emphasis because only a very small percentage of these individuals have more than a slight impairment of renal function. The mismanagement of the protein intake is no doubt due to the older views that nephritis was the cause of high blood pressure and that protein should be restricted in all forms of Bright's disease. Except for those few cases having impairment of kidney function, a protein intake of about 1 gm. per kilogram should be al-

lowed. Newburgh<sup>25, 26</sup> has reported the production of nephritis and vascular changes in animals fed a high protein diet, but the doses of protein were in proportion far in excess of the normal protein intake in man. Severe restriction of salt as advocated by Allen has been discarded,<sup>27</sup> likewise all specific drug therapy the latest of which has been potassium sulphocyanate<sup>28</sup> and bismuth subnitrate.<sup>29</sup> The marked lability of blood pressure makes it very difficult to appraise the effect of any treatment upon it and has often lead to overenthusiastic claims for many remedies. Overweight should be corrected and these patients must always be watched for the development of serious cardiac or cerebral vascular disease. Perhaps the most striking feature of the hypertensive patient is the nervous instability present. He is usually of the high-strung, emotional, and worrisome type. To correct this condition is perhaps the most important factor in treatment and yet the most difficult to attain. It involves not only all the daily activities of the home and business life but also the much more difficult problem of overcoming certain inherited qualities and defects. Frequent changes and vacations are of great value but only if the patient can afford them. Treatment then resolves itself into the relief of all stress, particularly mental stress, and moderation in all habits and activities.

### SUMMARY

1. While commonly present at some stage in most cases of Bright's disease, albuminuria, edema, and hypertension are not of themselves diagnostic of impaired kidney function.

2. The most dependable evidence regarding the presence or absence of nephritis is to be obtained from the microscopic examination of the urinary sediment and from the various renal function tests.

3. A plan has been suggested for correlating and simplifying the various classifications of nephritis.

4. The vast majority of patients with hypertension exhibit no serious impairment of kidney function and only 4 to 10 per cent die of renal insufficiency. Death is usually due to vascular cardiac or cerebral complications.

5. All cases of hypertension should be classified under some such term as vascular or essential hypertension until the clinical course justifies a diagnosis indicating defi-

nite involvement of the heart, brain or kidneys, instead of the common practice of grouping all of these cases under the term nephritis.

6. There is no justification and there may be actual harm in the restriction of meats and other protein foods in the presence of nephritis, albuminuria, edema, or hypertension unless impaired kidney function can be demonstrated.

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## Some Dangers of Socialized Medicine

A practical way to size up the value of socialized medicine is to look about us and see how it has worked elsewhere. Certain groups of doctors, we learn, now say that socialized medicine is coming anyway, so we might as well give up the fight against it. They argue that if all the doctors can be placed on a payroll at \$3,000 a year each, they will be better off, on the whole, than now. Like many other beautiful visions of a socialistic state, this one is very rosy, but will it bear the cold, hard light of fact? Is it possible that after the machinery is all set up the doctors may find themselves in the same situation where the school teachers are at present: their pay cut to the bone, till many are living in attic rooms, cooking their own meals, patching their clothes, accepting charitable gifts from the townspeople and with the pay checks anywhere from a few months to a year behind. City and state governments everywhere are virtually insolvent, and if this pitiful fate can happen to the teachers, what would prevent it from happening to the doctors? Who would or could guarantee that \$3,000 a year, or any other sum?

Would the defiling hand of politics, too, be kept off a system that would so clearly handle large sums of money and provide jobs for so many appointees? Many schemes of socialized medicine have sprung up around the country since the report of the Committee on the Costs of Medical Care turned the public thought in that direction. They often take the form of "health insurance" and have blossomed most prodigally in the golden State of California, a state that has been sorely afflicted by quacks of all kinds, medical and otherwise. Authorities on medical economics pointed out years ago that such schemes might easily degenerate into "rackets" and it now appears that that is exactly what has happened. Thousands of trusting Californians were wheedled into paying \$1 to \$5 a month to these medical and hospital organizations, only to find when the time came for medical and surgical aid that the concern had suspended business and the money was gone. Nineteen men

have been indicted by the grand jury of one county, but only three have been located. This is partly due to the fact that the action of the grand jury came nearly a year after the facts were known, indicating, it would seem, some sort of corrupt political influence. If the whole medical machinery of the country were in the hands of the bosses, what would the situation be?

Let us look next at Germany and its well-known *Krankenkasse* or health-insurance system. We find an enlightening article about it in a western medical publication by a writer who seems to know what he is talking about. Like many other schemes, its purpose is splendid, but human nature enters in to take advantage of its defects. The law provides that a worker who is certified by a physician to be too ill to work is entitled to be laid off on half pay for as long as 26 weeks. So a man who is dissatisfied or tired of his work goes to his doctor and asks to be "written sick." If the doctor refuses, he changes doctors till he finds one willing to oblige. Doctor and patient lose the old-time personal touch. They are mere cogs in the machine. The ambitious young physician, burning to make great discoveries and work miracles of healing, finally becomes a mere automaton, writing orders and reports, orders and reports, day after day, week after week. The crowds of patients he has to see leave him exhausted, with no time or strength for reading, much less for original work. His salary, too, is pitifully small, because the funds are eaten up by the immense overhead. As many lay workers as physicians, it seems, are on the pay roll.

The patients, too, are victims of this attempt to create health by bureaucratic machinery. The physician has to see something like 50 patients in his two hours of office consultation in order to make a living wage. That figures out at about two minutes to each patient. We all know that the German doctor is faithful, earnest, efficient, and no doubt gives his best under these terribly adverse circumstances. The aim of the system, too, is of the highest character. But "the best laid plans of mice and men gang aft agley." With these

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## EDITORIALS

### Eye Trouble and "Aye" Trouble

A defect of the eye has just been discovered by Professor Ames of the Department of Optics at Dartmouth which has no doubt existed for a long time without anyone knowing anything of it. The discovery explains a lot of things that folks have been wondering about. It seems that to the victim of this defect an object appears of one shape and size to one eye and another shape and size to the other. It is really quite common, the Professor assures us. In fact, something like one-third of all cases of eye trouble he has examined have it. If that is true, it must be that many have it who think their eyes are perfectly normal. Yet all the time they are seeing things one way with one eye and another way with the other. When they look with one eye an object seems enormous. When they look with the other, it seems like nothing at all.

We evidently have some victims of this malady at Washington, at Albany, and at various State capitals and in the City administrations. The Committee on the Cost of Medical Care were so badly afflicted that when they looked at the voter who has a pain now and then, he appeared as big as an elephant, but when

they turned the other eye on the doctor they just couldn't see him. Various cities and counties are erecting huge hospitals where every relative and friend of the politicians are to have free board and treatment, while the doctors are expected to give their services gratis. It is seeing big and seeing little again.

Professor Ames calls the disease "aniseikonia," from Greek words meaning "unlike images." It is said to cause nervousness and make the patient sick at the stomach. The one who has been the most patient in all this long discussion of the cost of medical care has been the doctor, and the habit of the authorities who see the voter big and the doctor little not only make him nervous and cause a feeling of nausea, but give him a severe pain in the neck region.

The politicians are proceeding at an alarming rate along the road that leads to the socialization of medicine, and it will not be long before measures looking in that direction will be coming before the State legislatures. Then the eye trouble will develop into "aye" trouble. Powerful forces will be behind these measures. All that the doctors will have to do to insure their success will be to do nothing. When the physician wakes up to find that he is only a hired man, sent here and there by some civilian official, it will be too late. The legislators, under the political whip, will vote "aye," and the mischief will be done.

Any other body of workers threatened by adverse legislation would deluge their Congressmen and State lawmakers with telegrams and letters until they turned the right eye on the matter and saw things in the proper proportion. It is time to take a lesson from the organized bodies of workers and war veterans, whose perfectly legitimate appeals to lawmaking bodies have such amazing success. One letter from a big campaign contributor, too, works wonders. A letter from a lawmaker's family doctor would carry enormous weight.

These eye troubles and "aye" troubles are bad, but they are curable, and it is high time for the profession to get busy on them.

## Some Dangers of Socialized Medicine

A practical way to size up the value of socialized medicine is to look about us and see how it has worked elsewhere. Certain groups of doctors, we learn, now say that socialized medicine is coming anyway, so we might as well give up the fight against it. They argue that if all the doctors can be placed on a payroll at \$3,000 a year each, they will be better off, on the whole, than now. Like many other beautiful visions of a socialistic state, this one is very rosy, but will it bear the cold, hard light of fact? Is it possible that after the machinery is all set up the doctors may find themselves in the same situation where the school teachers are at present: their pay cut to the bone, till many are living in attic rooms, cooking their own meals, patching their clothes, accepting charitable gifts from the townspeople and with the pay checks anywhere from a few months to a year behind. City and state governments everywhere are virtually insolvent, and if this pitiful fate can happen to the teachers, what would prevent it from happening to the doctors? Who would or could guarantee that \$3,000 a year, or any other sum?

Would the defiling hand of politics, too, be kept off a system that would so clearly handle large sums of money and provide jobs for so many appointees? Many schemes of socialized medicine have sprung up around the country since the report of the Committee on the Costs of Medical Care turned the public thought in that direction. They often take the form of "health insurance" and have blossomed most prodigally in the golden State of California, a state that has been sorely afflicted by quacks of all kinds, medical and otherwise. Authorities on medical economics pointed out years ago that such schemes might easily degenerate into "rackets" and it now appears that that is exactly what has happened. Thousands of trusting Californians were wheedled into paying \$1 to \$5 a month to these medical and hospital organizations, only to find when the time came for medical and surgical aid that the concern had suspended business and the money was gone. Nineteen men

have been indicted by the grand jury of one county, but only three have been located. This is partly due to the fact that the action of the grand jury came nearly a year after the facts were known, indicating, it would seem, some sort of corrupt political influence. If the whole medical machinery of the country were in the hands of the bosses, what would the situation be?

Let us look next at Germany and its well known *Krankenkasse* or health-insurance system. We find an enlightening article about it in a western medical publication by a writer who seems to know what he is talking about. Like many other schemes, its purpose is splendid, but human nature enters in to take advantage of its defects. The law provides that a worker who is certified by a physician to be too ill to work is entitled to be laid off on half pay for as long as 26 weeks. So a man who is dissatisfied or tired of his work goes to his doctor and asks to be "written sick." If the doctor refuses, he changes doctors till he finds one willing to oblige. Doctor and patient lose the old-time personal touch. They are mere cogs in the machine. The ambitious young physician, burning to make great discoveries and work miracles of healing, finally becomes a mere automaton, writing orders and reports, orders and reports, day after day, week after week. The crowds of patients he has to see leave him exhausted, with no time or strength for reading, much less for original work. His salary, too, is pitifully small, because the funds are eaten up by the immense overhead. As many lay workers as physicians, it seems, are on the pay roll.

The patients, too, are victims of this attempt to create health by bureaucratic machinery. The physician has to see something like 50 patients in his two hours of office consultation in order to make a living wage. That figures out at about two minutes to each patient. We all know that the German doctor is faithful, earnest, efficient, and no doubt gives his best under these terribly adverse circumstances. The aim of the system, too, is of the highest character. But "the best laid plans of mice and men gang aft agley." With these

examples before our eyes, should we not go a bit slow before we give up the American system that is vanquishing one fell disease after another as the gods of Olympus vanquished the giants, and is prolonging the life of men on the earth like the discovery of some magic fountain of the Arabian Nights? Nations have been deceived before now by pictures of roseate schemes that only turned to the ashes of disappointment. In all our hasty national plans of change, let us not be led to plunge into some error that we can never retrieve.

### A New Journal of Digestive Diseases

It seems surprising that up to this time there has not existed in this hemisphere a monthly publication devoted exclusively to problems of the digestive system and nutrition. Articles in this field have been scattered through dozens of more generalized publications so that anyone wishing information had to make a wide search for it. In this journal and that, of a special type, have appeared articles on the work of the experimenter, the internist, the parasitologist, the surgeon, the anatomist, the neuropsychiatrist, the physiologic chemist, the pharmacologist, and the dietician, but how many physicians have had ready access to all these periodicals? Very few.

Now we have an attempt to bring together in one publication the findings of all workers in this vital field. The new magazine is called *The American Journal of Digestive Diseases and Nutrition*. Its Editor-in-Chief is Dr. Frank Smithies, of Chicago, and its Supervising Editor is Dr. B. S. Carnell, of Fort Wayne, Ind. It is divided into ten sections: Clinical Medicine—Diseases of Digestion; Nutrition; Parasitology; Roentgenology; Therapeutics; Allergy; Esophagus; Experimental Physiology; Abdominal Surgery; and Surgery of the Lower Colon and Rectum. Over one hundred physicians throughout the country make up its Editorial Council. This state is represented by Drs. W. A. Bastedo, A. A. Berg, Harlow Brooks, B. B. Crohn, C. G. Heyd, J. M. Lynch, H. F. Shattuck, W. H. Stewart, and M. F. Vorhaus, of New York City,

and A. H. Aaron and A. A. Jones, of Buffalo.

The new publication makes a greater effort at good looks than most medical journals, even going to the extreme of leaving large areas of blank white paper that might carry something useful. Two facing pages, for example, have 20 square inches of print and 184 square inches of white space. Nine of the 90 pages are title pages of the departments, with about six or eight words surrounded by an expanse of blank paper. Here beauty and usefulness are at war with one another, and it will be interesting to see which will survive. A happy harmony might easily be achieved, preserving both.

However, so much of good is in the new sister publication, and so much more is in prospect, that criticism may well be subordinated to best wishes for a long, happy, and distinguished future.

### Counter Attack Against Diphtheria in New York State

While the usual fighting force arrayed against diphtheria is always in operation, it is occasionally necessary that the reserves be called into action for a more powerful drive. When the enemy gains even a little, is the time to deliver a counter attack. Thus, and thus only, may front lines be pushed more deeply into hostile territory. As will be seen in the article by Commissioner Parran of the State Department of Health which appeared in the April 15th issue of the JOURNAL, such a moment recently arrived. A slight increase in incidence of diphtheria through the State, instead of the desired decrease, occurred in 1933. A number of small explosive local epidemics were also reported.

With highly commendable decisiveness Commissioner Parran called together the members of the Anti-Diphtheria Committee which conducted a remarkably successful campaign in the five years 1926 to 1931. That board of strategy accomplished reduction of morbidity from the disease from 116 cases per 100,000 of population in the entire state in 1925 to only 20 in 1933, of mortality from 8.6 per



100,000 in 1925 to 1.1 in 1933. Its weapon was immunization, its fighting man the family physician.

Even though the present situation indicates only a slight creeping gain by the enemy, the Commissioner has again mobilized, wisely, the entire army held in reserve. That army has experience and training in method; and it has gone to the attack without delay. The physicians are under direction of Dr. Farner's State Society Committee on Public Health through the usual County Society channels; the Metropolitan Life Insurance Company is again working through its agents and nurses; the State Committee on Tuberculosis is again conducting a poster campaign of publicity; the State Department of Health is making a house-to-house canvass by its lay workers and nurses.

### Nurses and Epidemics

Great epidemics in the past called for the help of hundreds of nurses who fought, often in vain, to stop the inexorable march of communicable disease. To-day nurses by the thousands go quietly about, from home to home, halting epidemics before they start. There is no beat of drum or fanfare of trumpets about it, but how infinitely more effective. In the old days the nurse was splendid at fanning the fevered brow, giving the drink of cold water, and gently closing the eyes of the dying. Now she discovers the case in its early stages, teaching the family how to care for the patient, calls in the doctor, isolates the sufferer for the good of himself and everybody else, and before the month is out the victim is able to sit up and take a little nourishment. No heroics, no medals, but the community may have been saved a string of funerals just the same.

A big part of modern nursing is to keep well folks well. The nurse has to be a teacher. She instructs an entire community in the art of taking care of itself. Like big children, they forget their lessons, an epidemic shows its head, and then she trains the mother to do what is best for her ill family. Mother's idea may be to give the baby something out of the big bottle of patent medicine she keeps on the shelf

for all ailments. Then the nurse must persuade her to call the doctor, and must become his assistant to see that his directions are carried out and to aid in prophylactic measures for others who have been exposed. She reports suspected neighborhood cases and in casual gossip discovers many that an investigating health officer would never find. If the situation looks bad, she lends a hand in campaigns for immunization against smallpox and diphtheria. She saves from illness and maybe death dozens or scores of people who will never appreciate it or thank her for it. She knows it, but it doesn't disturb her any. When her day is done, she changes to a very becoming frock and hat, powders her nose, and goes to the movies. Next morning she is hard at it again.

She cannot be everywhere at once. Some of the patients have no one to care for them, and she cannot stay, with an entire community on her heart and hands, so they must go to the hospital. Some one has figured out that contagious disease cases visited by the Henry Street Nursing Service in New York City cost \$7.13 per patient for the entire illness, while the expense per case at the Willard Parker Hospital ran to \$85 for measles, \$111 for diphtheria, \$194 for whooping cough, and \$234 for scarlet fever. The death rate, too, was lower in the contagious disease cases cared for by the visiting nurse service, although we must remember that it is often the more severe cases that go to the hospital.

It is disappointing, in view of all this fine record, to learn from the State Department of Health that there are sections where there are no public health nurses whatsoever, and many more sections where the nurses have such large territory that they can make practically no demonstrations of actual nursing in the home. Printed directions are not enough. Demonstrations are necessary. Two visits, or even one, may be sufficient, but they should be provided for every case of communicable disease in a community, no matter whether the patient be rich or poor. Every community should maintain this service in mere self-defense. As the State Department of Health well says: "If a nurse

saves the life of one child, the community will be richer by many times the salary of that nurse."

### Twilight of the "Practical" Doctor in Germany

The uneducated "practical" doctor of Germany is to become educated, the "natural" medicine man is to have a scientific training, the rough and ready healer must learn a little more about the delicate and mysterious human organism he is treating. That is the decree of the new Nazi government, and the legislation to accomplish it is said to be now on its way through the mill.

Everyone knows that it has been legal in Germany for any person, educated or not, to practice the art of healing, on the idea that some are "natural-born" doctors, who understand by a sort of sixth sense how to diagnose and cure disease. These lay doctors are known as Heilpraktiker, and number only 4,280. They held their first congress last November.

Now they are to be regulated, like everything else in Germany. They must be German citizens of Aryan extraction, not married to non-Aryans, must belong to the League of Heilpraktiker, and be approved by the Minister of Health. They will not be permitted to enter the field of health insurance or public health work, or to treat venereal diseases, practice obstetrics and surgery, or give certain potent medicines.

The twilight of their day, however, seems to be indicated by regulations for their education, which reveal that the former uneducated healers are to have no place in the new Germany. If a "natural-born" healer is good, it will make him all the better if he knows a few facts about his patient's organism—that seems to be the simple logic behind the new law. Thus, as the legislation is outlined by the Berlin correspondent of the *Journal of the American Medical Association*, the applicant must have served one year as an attendant on the sick in an approved hospital. Then he must take a three-year course in a recognized medical school, pass an examination, and serve a year as a hospital intern. Even then he is only a Heilpraktiker. If a young

man who feels the urge to heal the sick must go through all this preparation to be a mere bush-leaguer, as it were, why not put a little more time and effort into it, and be a real doctor? That conclusion seems inevitable, and if the Heilpraktiker themselves do not see the handwriting on the wall, the plain trend of the legislation is toward later regulations that will do away with them entirely. A really practical doctor is an educated doctor. An uneducated "practical" doctor is impractical.

### Freshets that Bring Disease

Physicians and health officers are warned to be on their guard at this season of the year against epidemic diseases that have their origin in polluted water supplies. The melting snows and abundant rains cause the tiny rills and rivulets that feed our reservoirs to swell into raging torrents. They burst their banks and spread over adjacent territory, picking up any contamination that may be lying about and bringing it on the run to the public water supply, where it may work mischief if not detected and guarded against.

If cases of typhoid fever, dysentery, and diarrheal troubles appear without any other apparent cause, the water supply may well fall under suspicion and warrant investigation. The water supply of dairy farms, too, is equally liable to contamination during the spring freshet season, and everyone who has to do with the people's health should keep that well in mind if an epidemic starts. It is, of course, gratifyingly true that the protection of public water supplies nowadays is far superior to what it was forty or fifty years ago. A germ that gets past the health officials has to step spry. But we all know that they do slip by sometimes.

The good old precaution of boiling the water then comes into vogue, or chemical treatment is resorted to. A bulletin of the Metropolitan Life Insurance Company reminds us that following the wholesale inoculation of the inhabitants of the flooded areas of the lower Mississippi Valley in 1927, the deaths from typhoid fever were less than one-third of the average for the

previous five years, despite the greater danger of infection.

What Noah drank after the Flood is well known to all biblical students, and no doubt many of the more convivial to-day would willingly avoid bacterial perils by giving up water entirely, and following Noah's lead. But our bacteriologists and health officials, at any rate, are giving them less and less excuse for it.

### Cut-throat Medical Competition

One of the deplorable features of the depression has been the competition for contract medical work which has led in some parts of the country to underbidding, solicitation, and abuses of various kinds. It is true that we can hardly blame needy physicians for going to any legitimate lengths to support their families, but it is also true that competition of a cut-throat character injures the whole profession and must be halted if it is in the power of the state and county societies to stop it. It is not charged that all or even a large part of those in contract work are involved in this injurious underbidding, but it is evident on a moment's thought that the ethical may be ruined by the unethical; therefore it is a matter of everybody's concern, and we are told that nearly 48 per cent of all practicing physicians in the United States are engaged in some form of contract practice. Some are school physicians, some are medical examiners for insurance companies, some are in lodge or fraternal work, others are in compensation service, or look after the health of large groups of employees and their families.

The salaries or fees of doctors in these lines of service have suffered badly during the business slump, as has been natural and inevitable, but the reductions have been made worse, it appears, by underbidding and solicitation. It may be that there has been little or nothing of this sort going on in New York State, but it has been so flagrant in some other parts of the country as to call for severe disciplinary action. The situation in St. Louis is told in an article in *Medical Economics*, where the County Medical Society has created a Code and Contract Board to handle it.

The St. Louis Board has the power and the duty to investigate any and all written or implied contracts for medical service made by any member of the society. If these contracts are unethical, the member may be brought before the Censors Committee, and if convicted of unethical conduct, he may be suspended from membership. Conduct considered unethical includes direct or indirect solicitation of patients, underbidding, compensation inadequate to assure good medical service, prevention of free choice of physician, etc. The member is given a reasonable time to correct any objectionable practices.

The black list embraces not only erring physicians, but the institutions that employ them. The Code and Contract Board draws up a list of approved clubs, lodges, hospitals, clinics, and other institutions that use medical service under contract, and the approved list "shall receive the support and endorsement of the members of the society," according to the official resolution. Members who serve in institutions not on the approved list "shall not be in good standing if they continue their support." Another interesting provision is that "the Board shall adopt policies to insure remuneration for services rendered by the profession to institutions supported by public or private funds, taxes, endowments, etc." Gratuitous services to the indigent, of course, continue.

How far this evil has extended is unknown, but the depression has been so long and severe that it would not be surprising if doctors in many parts of the country had been driven to a kind of competition they would never seek in ordinary times. Once in this sort of thing, it is hard to get out. Business is now on the up-grade, and with the helping hand of their County Society behind them, working on the St. Louis plan, they may be able to rise to higher levels. As in another well-known case, the "Spirit of St. Louis" may take them to their goal.

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A writer in *Hygieia* suggests that the apparent increase in cancer may be due to the fact that more cancer is recognized to-day than ever before.

# Society News

## Medical Society State of New York Committee on Public Health and Medical Education

Thomas P. Farmer, M.D., *Chairman*  
608 East Genesee St., Syracuse, N. Y.

### COURSE ON INTERNAL MEDICINE

arranged for Chenango and Cortland County  
Medical Societies by Dr. Clayton W. Greene,  
Buffalo, N. Y. Norwich, afternoons. Cortland,  
evenings

1934  
April 20....*Modern Methods in the Treatment  
of Syphilis*

Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo,  
N. Y.

April 27.....*Angina Pectoris and Coronary  
Occlusion*

Dr. Clayton W. Greene, 135 Linwood Ave., Buf-  
falo, N. Y.

May 4.....*Anemia*  
Dr. F. D. Leopold, Medical Arts Building,  
Buffalo, N. Y.

May 11.....*Treatment of Dyspnea*  
Dr. E. H. Heath, 525 Delaware Ave., Buffalo,  
N. Y.

May 25....*The Treatment of Epigastric Distress*  
Dr. A. H. Aaron, 40 North Street, Buffalo, N. Y.

## Sullivan County Medical Society

arranged by Dr. Clayton W. Greene, Buffalo,  
New York

April 18.....*Modern Methods in the Treatment  
of Syphilis*  
Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo,  
N. Y.

April 25.....*Pneumonia*  
Dr. N. G. Russell, 135 Linwood Ave., Buffalo,  
N. Y.

May 2.....*Dyspnea*  
Dr. E. H. Heath, 525 Delaware Ave., Buffalo,  
N. Y.

May 9.....*Anemia*  
Dr. Francis D. Leopold, Medical Arts Building,  
Buffalo, N. Y.

May 23.....*Angina Pectoris and Coronary  
Occlusion*

Dr. C. W. Greene, 135 Linwood Ave., Buffalo,  
N. Y.

June 6....*The Treatment of Epigastric Distress*  
Dr. A. H. Aaron, 40 North St., Buffalo, N. Y.

## The Recent "Floating Congress" of the Pan American Medical Association

### Statements by Leading Physicians on Their Observations of This Trip

Dr. Chevalier Jackson, President of the Pan American Medical Association said: "The Pan American Medical Association has no political, religious, racial, or commercial aims. It is a purely scientific body of medical men. It is intended only as a means of discussion and of effort at solution of many problems of medical science. For example, some diseases like cancer must be studied in all countries, and comparisons made at international meetings of physicians. Other diseases may be prevalent in one country and not in another. For example, amebic dysentery is usually regarded as a disease of the tropics. It has invaded the United States; and we wish to learn all that our confreres in the tropics know about it. Other diseases call for international control. Before such control can be established, scientific research and discussion by physicians are necessary. These are only a few of the many phases of our work. Many social features were arranged by our hosts. The trip over the Andes by automobile on perfect concrete highways, as guests of the Government of Venezuela was a memorable one. This highway is a gigantic engineering feat that has rendered this magnificent mountain region of easy access. We were royally welcomed in all of the countries visited."

Dr. John O. McReynolds of Dallas, Texas, retiring President of the Pan American Medical Association said: "The Floating Congress of the Pan American Medical Association has marked a new epoch in the realm of international science and international goodwill. The universal sentiment of those in attendance is that a fresh stimulation has been given to medical progress under the most favorable conditions for personal contacts and cultural development. In all of the countries visited on this cruise, there has been a most cordial response on the part of the medical profession, the several Governments, and the general population of the different nations. The influence in the promotion of a better understanding and a closer international relationship will surely be definite and enduring."

Dr. William D. Haggard, Professor of Surgery, Vanderbilt University, Nashville, Tenn., and President of the American College of Surgeons, declared: "The Floating Congress was the largest medical gathering ever held before comprising two scientific weeks, totaling 175 papers with profuse moving picture illustrations of the newest and best in surgical art and superlative from a medical standpoint. The amortization of the medicine of all of the Americas was an

epoch in Pan-Americanism. A voyage of peace, carrying beneficence to millions, is the truest idealism and surpassed the Spanish Armada in its humanitarian endeavors. The Pan American Medical Congress embraces the outstanding surgeons in all the Latin Republics and amalgamates the science of the old and the new world in its far reaching crusade against disease."

Dr Lewellys F Barker, Johns Hopkins University, Baltimore, Md., stated "The Pan American Medical Association cruise has, in my opinion, been a great cruise, under the Presidency of Dr John O McReynolds of Dallas, Texas. It has not only brought many medical men of the United States together, but it has given them an opportunity of meeting in a scientific and social way a large number of the medical men of Mexico, Central America, and South America. The scientific papers read were of the highest order and the discussions illuminating. Everyone on the trip seemed to feel sure that the Pan American Medical Association is performing a most useful function in cementing bonds of friendship among the medical scientists of the Western Hemisphere."

Dr Harlow Brooks, Professor of Medicine, Bellevue Medical College, New York, said "The most remarkable feature of the trip has been the cordiality with which we have been received at every port at which we have stopped. The second most striking feature of the cruise has been the excellence of the papers presented, especially on the boat, and the close attention to the professional phase of the work by all the sections. Also a very remarkable feature has been the exceedingly fine demonstrations and exhibitions presented by the physicians ashore. From my own part, I must particularly mention the exceedingly remarkable exhibitions given us in Puerto Rico. These are of inestimable value, especially

to those of us interested in tropical disease and tropical problems."

Dr Bernard Sachs, President of the New York Academy of Medicine New York said "This floating Congress has been an unqualified success, it enabled the members of the Pan American Medical Association to meet distinguished colleagues from Cuba Panama Colombia Venezuela, and Puerto Rico, with important men and women in all these countries the influence of the congress will be all to the good in strengthening the bonds of friendship between the people of this Western Hemisphere. Above and beyond this, this Congress has brought together men and women from all parts of the union in the various specialties, and has afforded numerous occasions for exchange of ideas between groups of medical and surgical specialists such as no other Congress has ever afforded. Personally I feel that the scientific sessions have been of a high order of excellence, and more stimulating than any congress I have ever attended. Add to this the unusual opportunity for a complete relaxation from the routine of duty, for stimulating companionship, and it is certain that the floating congress will become increasingly popular."

Dr Hugh H Young, Professor of Urology, Johns Hopkins University, stated "Others have spoken of the great success of this floating congress. The cruise not only removed North American medicos from the terrors of an awful winter, but it relieved the ennui of an ordinary cruise by scientific interest and instruction of great value. A most important innovation was to have the various specialists meet together in four groups. This was of value in that they learned of the great advances which have been made in other lines. Only good can come of medical and social intercourse with our Latin American colleagues."

## THE YOUNGER HAVING A BETTER CHANCE TO GROW OLDER

The death rates for the several million policyholders of the Metropolitan Life Insurance Company in the United States and Canada show a decrease among children and young adults and an increase for middle life and old age. The company's *Bulletin* tells us that at ages 1 to 4 the death rate in 1933 among white children was less than one third of the 1911 rate, and among colored children, one fourth the earlier figure. The declines in later childhood and adolescence are only a little less than these. Continued improvement is also shown in the death rate of young adults. For the important working ages, up to 45, the 1933 rates for white persons were only one-half of those of 20 years ago, while the decline among young colored adults was one fifth to one third.

The death rates for middle life and old age tended to show increases in 1933 except among the white women. Although the rate for this

age group was lower than that for 1911, no improvement has been shown during the last 12 years, and at the older ages, particularly among men, the rate has actually increased.

Substantial mortality declines since 1911 were shown in tuberculosis, pneumonia, pregnancy and childbirth, diphtheria, measles, whooping cough, and typhoid fever. On the other hand, cancer, diabetes, and heart disease recorded higher mortality in the older age bracket than ever before.

The doctors in China are getting too rich, so a bill has been framed at Canton, and is considered certain to become law, limiting the doctor's fee to \$1.00 for the first consultation and 40 cents for every later one. The rule is to apply to both foreign and native physicians. Under this law the famous patient who said, "Well, doctor, here I am again!" would save only 60 cents.

# Books

## BOOKS RECEIVED

[Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from this column will be made for review, as dictated by their merits, or in the interests of our readers.]

**The Single Woman.**—A Medical Study in Sex Education. By Robert Latou Dickinson and Lura Beam. Octavo of 469 pages. Baltimore, Williams & Wilkins Company, 1934. Cloth, \$5.00. (Medical Aspects of Human Fertility Series, issued by the National Committee on Maternal Health, Inc.)

**The Foundations of Psychology.**—By Jared S. Moore, Ph.D., and Herbert Gurnee. Second Edition, revised.

Octavo of 287 pages. Princeton, N. J., Princeton University Press, 1933. Cloth, \$3.00.

**Das Wunder der Heilung durch Eigenes Blut.**—By Dr. Ludwig Sternheim. Octavo of 64 pages. Bern, Switzerland, Hans Huber [c.1933]. Paper, Fr. 3.50.

**La Lutte Internationale Contre le Cancer.**—By Dr. Jacques Bandaline. Octavo of 947 pages, illustrated. Paris, Norbert Maloine, 1933. Paper Fr. 135.

## BOOKS REVIEWED

**Food, Nutrition and Health.**—By E. V. McCollum, Ph.D. and J. E. Becker, M.A. Third Edition. 12 mo. of 146 pages. Baltimore, E. V. McCollum & J. E. Becker, East End Station [c. 1933.] Cloth, \$1.50.

According to the author, the aim of this popular book is to enable the reader "to detect the misinformation now being so widely disseminated by faddists."

The reader may be interested to learn how changes in climate or in geographical location govern differences in diets or influence the physical developments of various people. With such a panoramic study one wonders why we Americans who are constantly seeking perfection in diet have little to show for our intense efforts. The relation of diet to dental caries is convincingly discussed. This comprehensive book written in an abstract manner does not poison the layman's mind with meaningless diets and may well serve to supplement the physician's efforts in serving to inform the layman as to the meaning of food and nutrition.

EMANUEL KRIMSKY.

**Infections of the Hand.**—A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand and Forearm. By Allen B. Kanavel, M.D. Sixth Edition. Octavo of 552 pages, illustrated. Philadelphia, Lea & Febiger, 1933. Cloth, \$6.

The sixth edition of "Infections of the Hand" is with us. It has become medical tradition to associate with certain things the name of the master. Circulation immediately recalls William Harvey, ligatures, Ambrose Paré, and infections of the hand, Allen B. Kanavel.

The book is more profusely illustrated than ever before. The systematic arrangement is the best possible. What more need be said? This book is the vade mecum of the surgeon and general practitioner.

ROBERT F. BARBER.

**Manual of Urology.**—By R. M. LeComte, M.D. 12mo. of 317 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$4.00.

This little book is exactly what it purports to be and no more. It is a manual designed for students and should be of value to any student reviewing the subject and preparing for an examination. We do not think it would be of any interest or value to the practitioner.

N. P. RATHRUM.

**A Text-Book of Medicine.**—Edited by Russell L. Cecil, M.D. Third Edition. Octavo of 1664 pages. Philadelphia, W. B. Saunders Company, 1933. Cloth, \$9.00.

The third edition of this standard text on medicine was made necessary because of rapid advances in internal medicine since the publi-

cation of the second edition, only three years ago. Many of the older chapters have been revised and rewritten by the authors. New articles have been added on subjects more recently discussed, especially upon the ductless gland system.

As a textbook and reference work, this volume is preëminently one of the most valuable and is recognized as such. It contains a seemingly endless store of necessary, accurate information, well written and well presented. From a typographical point of view the volume is excellent, good paper, clear printing and easy to read. For one to keep in touch with the present knowledge of medicine, this volume is indispensable.

HENRY M. MOSES.

**Blood Pictures.**—An Introduction to Clinical Hematology. By Cecil Price-Jones. Third Edition. Octavo of 72 pages illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$2.40.

The third edition of Price-Jones' book includes some of the more recent advances in hematology. It presents, in concise form, for the general practitioner, the methods of blood examinations and the description of the normal pictures. The colored plates are exceptionally well done. Although the English terminology is adhered to, only slight confusion is entailed. Perhaps the greatest deterrent to its wide acceptance is the price, which seems to be rather high for so small a volume.

MAX LEDERER.

**Mayou's Diseases of the Eye.**—Fourth Edition revised and largely rewritten by Frederick Ridley, B.Sc., and Arnold Sorsby, M.D. 12mo. of 249 pages, illustrated. New York, Oxford University Press, 1933. Cloth, \$2.25.

This pocket-sized volume indicates from its mere dimensions that one must not really expect an elaborate discourse on "Diseases of the Eye." Such a work might serve as a guide to introduce a student to a more elaborate book, but unfortunately certain peculiar classifications as set down by the authors make it impossible to coordinate their teachings with those met with in more extensive works. Thus phlyctenular ulcers are classed as suppurative inflammations of the cornea as is also keratomalacia. Chronic glaucoma is said to be found but rarely under fifty years of age.

The illustrations do not lead to elaboration of the statements set down in the text.

The reviewer cannot endorse a work the object of which is obscure. The preface does not state the purpose for which the book was written.

JOHN N. EVANS.







**THE PRESIDENTIAL ADDRESS****FREDERICK H. FLAHERTY, M.D., SYRACUSE, N. Y.**

Members of the Medical Society of the State of New York, Invited Guests:

Since you have honored me with the office of President, I have studied with increasing interest the origin, history and purposes of this Society. It is with considerable pleasure that I have reviewed its early transactions and history. One cannot help being impressed by the high ideals, lofty principles, and broad vision of the leading men who were the pioneers in the organization of the Medical Society of the State of New York.

In the early days of the 19th century medical practice was chaotic. There were no particular regulations. Quacks, pretenders, and all sorts of men attempted to practice medicine. It is true, colleges were established in Philadelphia, New York, Boston, and other centers which developed a few high-grade physicians, but there was no organization to control or educate the man who desired to care for the sick. The main thought of this Society, therefore, was the betterment of medical education and the regulation of the practice of medicine.

These early members were not only educated in medicine but showed considerable knowledge in all the sciences. They realized that regulation of the practice of medicine could only be obtained by the authority of the State and so applied to the State Legislature. The authority was granted and the Medical Society of the State of New York was created.

In reviewing the transactions of this Society from the first meeting in 1807, one is impressed by the fact that organization and the better training of the physician

were their main objectives. The transactions abound with efforts to strengthen and fortify these principles. They early established the policy of prize essays in order to stimulate study, research, and observations of important cases. In the transactions many creditable essays and observations are recorded which show not only clear reasoning but excellent judgment.

Dr. Thomas Spencer of Madison County, President of this Society, presided at the 28th Annual Meeting in February 1834. The Medical Society at that time consisted of one delegate from each of the fifty-four counties, one delegate from the College of Physicians and Surgeons in New York City, twenty-six honorary members, and thirty-one permanent members. The honorary members represented outstanding men of the country, of which the Society elected two each year. The permanent membership consisted of men who had served as officers or delegates of the State Society, and two such members were elected each year.

The charter designated the first Tuesday in February as the date for the Annual Meeting and that it should be held in Albany during the session of the Legislature. The meeting was held at the Capitol. The annual address was given in the Assembly Room by permission of the Legislature. Six seats were reserved for members of the Legislature indicating that our early members were good strategists as well as delegates. Thirty-one delegates were present.

I can visualize these delegates, three or more days previous to the meeting, arranging to start by coach or on horseback over

rough country roads, some covered with snow, coming from the various counties to Albany. The only railroad at that time was the one from New York to Albany with the extension to Schenectady. Transportation was primitive, the locomotives burning wood. The trip from Ontario, Jefferson and other remote counties required considerable fortitude. How many of our delegates to-day would make such a trip on horseback or by coach? Yet, these pioneers did attend in goodly numbers.

Arriving in Albany they gathered at the tavern. The accommodations were crude in midwinter—fireplace in the main lounging room, iron wood-burning stoves to heat the room, lighted by candles and no bathroom facilities within the tavern. On awakening in the morning the washbasin frozen with a thin layer of ice. After breakfasting, wearing their high leather boots, they trudged up the hill at Albany to the legislative hall. The legislative hall was heated with the same type of wood-burning stoves. Their proceedings record that they conducted their meetings in strict parliamentary order and with much dignity. Two former members from Cayuga County and the President of the Albany County Society were seated as honorary members.

The session lasted three days. Besides the routine business, much important business was discussed. A communication was received from Dr. Joshua Lee, a member of the Legislature and Chairman of the Committee on Medical Societies and Colleges, covering two petitions to the Legislature—one from the Medical Society of the County of New York regarding an alteration on the mode of admission into said Society so that every applicant might be examined by them, and the other from the Medical Society of the County of Genesee praying for a law to prevent the spread of smallpox in the state.

It was resolved that a committee of three be appointed to report upon the propriety and importance of changing the time of the convention of the State Medical Society to the second Tuesday in January instead of the first Tuesday in February. This was done to enable them to get their legis-

lative bills in at the earlier meeting of the Legislature.

Mr. Green C. Bronson, Attorney-General of New York State, gave an opinion on the powers of the County Society relative to admission and expulsion of its members.

In the homespun piece of fabric, from which the pattern of this Society was cut, one can detect running through the great mass of material one golden strand which was ever present. The principal thought of the founders of this Society was betterment in medical education with regulation of medical practice so that humanity could be protected.

The development of bacteriology, the principle of asepsis, the scientific study of drugs, the numerous valuable principles produced by the physicist in the scientific laboratory have all been taken up by our profession and utilized for the benefit of mankind. Their great value is recognized by all. The wonder is how the physician ever got along without them.

In spite of the many improvements in our method of diagnosis—such as x-ray, electrocardiogram, cystoscope, dye test, chemical examination of various secretions, bacterial test of the blood and other secretions, etc., which were entirely unknown in those early days—these pioneers did make some very clever diagnoses, did save many lives and were well aware that 85 per cent of the ordinary ills were recovered from rest, diet, and good nursing. These men were of great value to their patients. If one will take the pains to review some of these cases recorded in the early transactions of the Medical Society of the State of New York, one will be delighted and greatly interested in the observations and deductions of some of those early members of our Society one hundred years ago.

At present we are facing many important problems, the solution of which will demand study, careful planning and much hard work. The medical colleges are turning out more physicians than can be used in the present state of society. The incomes of the masses have been lowered to such a level that the average physician in actual practice is not receiving more than half the income received in 1929. Lay-

men, social workers, health workers, politicians, department store owners, would-be reformers, economists, socialists, antivivisectionists, and even Herr Hitler in Germany are all trying to change the present method of medical care so that it will concur with their ideas.

I believe it is quite clear that we are opposed to so-called socialized medicine. It is quite evident that the term "socialized medicine" is a red flag to many physicians. It is quite true that we have state medicine in many forms which are accepted as a matter of course and no one seems to get excited about it. The care of the insane by the State, which we have had for the last hundred years, is a definite form of state medicine. The State Laboratory for the diagnosis and treatment of malignant diseases is truly state medicine. The manufacture and distribution of various vaccines, toxoids, and many other biological preparations, are state medicine. The hospitalizing of the indigent patient, paid for by the city, county or state, is state medicine. The building of county and state hospitals for the care of tuberculosis is state medicine. The hospitalizing and treating of our veterans in government hospitals is state medicine. To what form of state medicine is it that the practicing physician or doctor objects?

The family physician should be protected in all such endeavors that his training and education have prepared him for in the diagnosis and care of the sick and injured. He should be permitted to be in charge of and supervise all health examinations not only of school children but of adults, the administering of vaccine, toxoids, and other biological remedies. If we are going to continue the practice of medicine as now constituted—and by this I mean that the family physician will be retained as such to administer to the sick and injured, that he will be able to retain his patients as individuals—the formation of groups, either by lodges, insurance companies, or other forms of group practice, should be discouraged.

The depression has had one beneficial reaction on the practice of medicine. It has called the attention of the authorities to the fact that the sick individual, who

is indigent or near indigent, is entitled to proper medical care as other necessities such as food, clothing, and shelter and that they are obligated to pay for the medical care of the indigent as well as for their food, clothing, and shelter. It is very apparent, as written in the present Welfare Law and its auxiliary, the TERA, that for home relief the physician must be paid. This can be done by one of two methods: The Welfare Officer can authorize the family physician to care for, to operate upon, and to deliver pregnant mothers at their homes and at times in the hospital for a reasonable modified fee. This is very important. They cannot and will not pay unreasonable fees. If any individual physician in the welfare district attempts to graft, pad his bill, or charge unreasonable fees, the Welfare Commission has the authority to appoint a physician or physicians to do all the welfare work in the district. It, therefore, behooves every County Society in the State to have their Public Relations Committee contact the Welfare Officer and endeavor to keep their welfare work on a fee basis for those physicians in the County who wish to render the service on a reduced fee basis thereby retaining their patients who, in better times, will return to them and again become pay patients. The so-called Vaughn Plan, in which many activities such as vaccination, administering toxoids, pre-school examinations, etc., are planned, is not only economical but efficient.

We stand for the preservation of the family physician. We believe the Public Welfare Law, as it is now being administered in some of our Counties in the State, will greatly correct many of the abuses.

The research of the medical investigator has produced a system of health service which has changed our civilization, increased the average length of life at least forty years, thus rendering possible many of the great developments in industrial and commercial life. It cannot be denied that, if it were not for the investigations and research work of the medical men resulting in the control and, in some instances, the obliteration of disease which formerly decimated the human race, our civilization could not have developed to its present

state. The higher demands on medical education have stimulated medical research. It has developed men of a higher type in the profession. This in turn has placed the physician on a higher plane in society. Our organization has always stood for better education of the physician and the highest type of ethics. Over one hundred years ago our Society formulated a standard of ethics which has survived with the Society and which has been copied by many state and national associations.

Our country has changed in the past thirty years from a rural farming state, in which the farmer was comfortably taken care of, to a highly organized industrial empire. Transportation has made radical changes in our economic condition. Education has likewise been an important factor. Enormous moneys have been poured into schools and colleges so that a greater mass of young men and women go through high school and college. This has increased the number of young men for the professions.

In this State, as well as in the nation, there has been an enormous increase in hospitals—government, state, and municipal. This has added a large factor to the change in methods of practice of our profession. Our State has developed a health service which has brought the average mortality rate down to the lowest in the history. The depression of the past four years has brought about a service for the unemployed which had never been dreamed of in the history of our country. The change of the word pauper to welfare has rightly taken away the stigma of aid. The rapid changes of method of our government in eliminating welfare and terming it CWA gave the unemployed the feeling he was working for the government which is true.

All of this is being accomplished by use of public funds. There is only one method for raising public funds. Public funds come from taxes either directly or indirectly. In April, 1933 there were 396,884 families on relief rolls. This is 15 per cent of the population of our State. This group of individuals must be rendered medical care when sick. Under the TERA state medical care, food, clothing, and

shelter are listed as necessities of life. Under the terms of the law the State establishes relief standards and reimburses the local welfare district for approved expenditures on account of unemployment relief including medical relief. A large number of our profession are asking and demanding that the physician be paid for all services rendered to that portion of the public—indigent, near indigent, dispensary patients, and hospital patients commonly known as ward patients—who cannot pay. There is justice in this demand. The physician should have the same consideration as do other citizens who are paid for services rendered or for goods sold.

Our Public Relations Committee has aptly expressed it: "Compensation to protect physicians against economic loss is rightfully expected and should be provided from public funds." The Welfare Departments in all the larger cities are paying the physician or physicians a salary for the care of the indigent. The purpose of this arrangement, I assume, is to better budget their funds. It has many objections. First, a practicing physician, who has a salaried job, usually takes care of his private work at the expense of his salaried work. This is only human. Secondly, it often occurs, if an indigent person is very ill or demands too much attention, that the case is sent to the charity wards of the hospital causing the city to pay for double service. Thirdly, too often the city physician is a political appointment, is not appointed for his ability but for his political influence and, as a result, gives inferior service. Fourth, a physician on a fee basis will always respond more promptly than one on a salary.

It cost the forty-one cities in the State of New York, which employed salaried physicians, \$103,667.56, according to the Mayors' conference on October 31, 1933. This is approximately \$1,000 per man for the year.

Our Society should go on record taking such action, as may be necessary, to correct this system. Each reputable physician in his community is not only entitled to his share of such work but, as a citizen and taxpayer, should receive it.

Great changes are rapidly taking place in the daily life of each citizen of the country. We have been going through a social revolution during the past several years. The status of the producer has already been changed. The manufacturer no longer dictates his former policies. Banking has been modified and greatly restricted. All business is now being regulated as never before in history. Forces are at work which will change the relationship of the physician to the public. The whole status of the physician will be altered. There may be restrictions placed upon us that may not be to our liking. My attention has already been called to the fact that the policy of the government in paying for the indigent and those who are near indigent may easily be developed into the panel system such as exists in England and other European countries.

There are many honest substantial citizens who are feeling the burden of illness such as never before has been experienced. The echoes of the report of high cost of medical care are still ringing in our ears. Are we going to stand still and let others make rules which will govern us and our professional work? Every State Society

in the United States is working on these same problems. The American Medical Association has its committees at work. Our State Society is doing its part. It is incumbent upon each and every County Society to do its part if we are going to survive.

Fred Betts, columnist of the *Syracuse Herald* on April 14, 1934 commenting on an address by Dr I S Falk, research associate of the Milbank Foundation, says: "Well, after the Federal Government nationalizes the power industry, thus relieving Senators and Assemblymen of the necessity of writing letters to utility officials, probably it will be medical rates that will come under the Albany legislative hammer. Indeed, the day does not seem very far off when any patient who objects to a physician's fee for treatment of sniffles, parrot fever or summer ailments will have a right to appeal to the Public Service Commission. How it will work out we do not pretend to know but, whatever happens, if present trends continue it seems likely that there will be a sufficient number of melancholia cases to keep the physicians going."

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### MEDICAL STUDY TRIP TO HUNGARY

At the invitation of the Hungarian Medical Postgraduate Committee of Budapest, Professor Emil de Grosz, President, and of the Association Budapest Town of Medicinal Springs," Archduke Dr Joseph Francis, President, a medical study trip to Hungary is being organized. The plans provide for a fortnight visit to Hungary during which there will be postgraduate lectures and demonstrations in English at the principal University clinics and at the municipal thermal baths and springs. Reduced railroad fares and hotel rates are granted by the Hungarian Govern-

ment. The party will sail from New York on August 18, 1934, visiting Munich and Oberammergau en route. The return trip may be made, optionally, via Berlin, Paris, or Italy, arriving back in New York on September 30.

American physicians of good standing are invited to join. The American Committee of the study trip consists of Harlow Brooks, M.D., Chairman, Charles G Kerley, M.D., Jerome M. Lynch, M.D., Wendell C Phillips, M.D., and Erwin Torok, M.D. Richard Kovacs, M.D., 1100 Park Ave., New York, is Secretary.

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A huge institution for medical study and treatment is projected by the Soviet government, according to an announcement made in New York by Prof. Nicholas J Krasnogorsky, Director of the Institute of Experimental Medicine in Leningrad, and one of the world's leading child specialists. It is to cost 120,000,000 roubles and plans are now being completed in New

York drafted according to American hospital practice. Twelve large buildings are contemplated, with 8,500 rooms for laboratories, wards, clinics, shops, etc., and with a staff of 3,500 scientists. The institution will be located in Leningrad, and is to be completed in two and one half years. It was first proposed, says Dr Krasnogorsky, by Maxine Gorky.

## PSYCHOANALYSIS IN PSYCHIATRIC PRACTICE

BERNARD GLUECK, M.D.

*New York, N. Y.*

It is impossible in the space allotted to do adequate justice to any single one of the many features of psychoanalytic psychology, and what I am endeavoring to do here is to present the barest sort of bird's-eye view of the matter for a general orientation.

More than three decades have elapsed since Freud began publishing his findings. From the very first, his contributions challenged the traditional ways of evaluating the causes of man's failure to adjust himself to the requirements of life. These traditional ways laid considerable stress upon constitutional equipment, toxic, traumatic, and other noxious external agents which were considered adequate to account completely for pathological theory. The contributions of psychoanalytic psychology are compelling a radically different orientation to the problem of human maladjustment. The implications of this new orientation for the questions of etiology, pathology, therapeutics, and preventive medicine are very far-reaching and are exercising an increasingly important influence also upon somatic pathology and treatment. This new orientation has to do primarily with the changed conceptions concerning the nature of man, which the discoveries of psychoanalytic psychology made possible. I shall, therefore, present a brief outline of these conceptions. For purposes of clarity, I shall avoid as much as possible technical terminology and shall follow the hint of the late William James, namely, speak of the various aspects of the personality as of so many different selves.

There is, first of all, the conscious, the socially oriented and visible self, the self which is in constant contact with the realities of the external world—it is the self of brain and brawn, of education and experience, the initiator and executor of conscious motives, and the spearhead of man's impacts with the world about him. It is obvious that whatever other forces there may be that enter into the determination of attitude and conduct must function through this conscious self, since it alone

has direct access to man's equipment for dealing with the requirements of life. In the final analysis it is the strength or weakness of this conscious self which decides the issues of adaptation. In psychoanalytic terminology we speak of this "self" as the "ego." Now, it does not require any profound psychological insight to appreciate that this "self" of which we are speaking is not co-equal with the "somatic or physical self," the disorders of which constitute the chief domain of medicine and surgery.

We are able to obtain a glimpse of what the moving forces of human attitude and conduct are that lie outside of this conscious self, when we observe what happens in the case of the insane patient. Here the conscious self or the "ego" abandons control and submits to forces which were hitherto unsuspected by ordinary observation. The delusions and misinterpretations of the insane, the bizarre distortions of reality, and the symbolic actions speak a language which is unfamiliar to us from observation of the ego of the average normal individual.

This brings us to a consideration of the next "self" which enters into the structure of the human personality, the "instinctual self." This self, the expression of which in pure form in adult life is only visible in the dream and in certain pathological states, particularly in mental disease, has to be subjected in the course of individual development to a complicated and difficult process of taming, transformation, and socialization before it can be utilized in the service of the adaptive requirements of man. It is the self that is identical with the psychoanalytic concept of the "id," a hypothetical reservoir of primitive, egocentric, and unadjusted strivings that reflect man's kinship to the lower forms of life. The conscious "self" is the product of rearing, education, and culture; it reflects the impress upon the asocial, amoral, and unadjusted infant of his social environment; it is the evidence of the moulding influence which the social milieu exercises

upon the developing individual. Now the central objective of this environmental influence is the weaning of the developing individual from the lures and attractions of the egocentric, selfish, and asocial aspects of his instinctual self, with the view of adjusting it to the requirements of life in association with others. We might state parenthetically that the major concern of psychoanalytic theory and practice is with the developmental vicissitudes and destiny of the instinctual life. For many years after psychoanalysis came into being the sources of the conflicts at the basis of human maladjustment were considered to be covered by the antagonism between the conscious and the instinctual selves.

So-called normal conduct would then reflect the achievement of a workable and satisfactory adjustment between the two sets of claims for the control of the personality which the individual is obliged to pay heed to. These two sets of claims are antagonistic from their very inception, they are those of instinct or nature on the one hand, and those of nurture and culture on the other hand. Well-adjusted or normal conduct is possible only when the conflicts or antagonisms between these two sets of claims are reduced to a minimum. Excessive domination by either set of these claims is bound to cause maladjustment. We shall see later on how the particular form of maladjustment is conditioned by the specific and individual vicissitudes of this interplay of internal forces. But we have to consider a third self, which enters into the composition of the personality, the "super-self." The recognition and acceptance of this aspect of the personality, the "super-ego" in psychoanalytic terminology, was made necessary in connection with the increasing experience with psychoanalysis as an instrument of research and therapy.

It is conceived of as a part of the conscious self which becomes differentiated in the very earliest stages of individual development, and is then introjected and internalized, continuing to develop as the subjective and unconscious aspect of what we know consciously as conscience. It becomes the internal regulator and monitor of conduct, or rather of the ego's management of the life of instinct. An impulse to cruelty, for instance, which, if permitted free range, would lead the conscious self to the commission of a cruel act, is obliged, as are all other instinctual drives, to subject

itself to the scrutiny of this "super-ego" function, and its destiny is determined by the relation of the "super-ego" to the "ego," and naturally also by the quality of both of these aspects of the personality. Naturally this simple statement of the situation does not attempt to do adequate justice to the complexities of the structure and organization of the human personality. But it is, nevertheless, true that normal as well as abnormal states of the personality can best be understood from a study of the interplay of the subjective forces which we have for clarity's sake spoken of as "selves" in the foregoing description. It will become obvious as we proceed that this conception of man does not involve a neglect or negation of all those other factors which have in the past constituted pathological theory. It merely focusses attention to certain inevitable and universal sources of maladjustment which lie in the necessity of adjusting primitive biological tendencies to the requirements of social life.

We have already indicated that normality so-called, is after all a relative and not an absolute concept and reflects the achievement of a satisfactory and workable compromise between the contending forces for the control of the personality and conduct. It is entirely in accord with actual clinical experience to see in the various forms of personality maladjustment from the mildest to the most severe, different degrees of deviation from the state of affairs mentioned in the foregoing. The pathological deviation may be the result either of special qualities in the various selves which we have outlined before, or in the relationship between these selves. Thus, to begin with, individuals undoubtedly differ in the original strength, intensity, and plasticity of their instinctual heritage; they certainly differ in the character of the super-ego which experience has shaped for them, and it is well known that they also differ in the strength and quality of the conscious self or ego. Individual experience certainly is bound to affect the interrelationships between these various aspects of the personality.

Thus when we speak of the so-called transference neuroses, that is, the various forms of hysteria and the compulsion and obsessional neuroses, we speak of individuals who suffer because of an unmanageable intrapsychic conflict and in whom the symptoms reflect an effort at a symbolic

or substitutive gratification of instinctual drives which are tabooed and prohibited by the super-ego, or a defense against them.

The conscious or socially oriented self has not undergone any appreciable weakening or disintegration, but it is inhibited and interfered with to a greater or less degree because of its subjugation to a too severe inhibitory influence from the super-ego. The conscious self still possesses insight into the fact that something is wrong, it is capable of a considerable degree of autocriticism and consciously, at any rate, desires and seeks relief from its difficulties. But it is incapable of dealing adequately with the intrapsychic conflict. Its integrity is threatened "because for the maintenance of this integrity it needs, on the one hand, secure possession of certain sexual impulses, or their derivatives, and on the other hand, a secure relation to external reality" (Jones). There are significant differences in etiology between the hysterias and compulsion neuroses which need not concern us at this moment. But it is true of all forms of psychoneurosis that in a general way the claims of instinct or nature have experienced an unnecessarily excessive denial and restriction in response to excessive taboos imposed upon the individual by that side of his nature which reflects the claims of culture and nurture. The difficulties of the psychoneurotic are not due to frictions with the environment as such, but to an intrapsychic conflict. Insofar as the claims of society or culture constitute an element of this conflict, they have become internalized and to all intents and purposes part of the nature of the individual, and they have acquired a degree of significance and power equal to the significance and power of instinct itself.

The next large category of personality maladjustment embraces the various forms of psychosis or mental disease. Here the situation might be said to be quite the reverse of what happens in the psychoneuroses, without invalidating the conception that basically the same forces are at work as in the psychoneuroses. But here the claims of instinct assume ascendancy and are given free rein. Through the abandonment of the sense of reality and of autocriticism the claims of culture are increasingly ignored; psychotic thinking and behavior reflect a regression of libido

to the earliest narcissistic phases, the individual becoming indifferent to the claims of reality. The difficulty here is obviously primarily with the ego, and it opens the way for a helpful definition of the relation of psychoanalytic doctrine to the problem of organic or toxic etiology when we observe that the same state of affairs exists whether the damage to the ego is due to organic or toxic agents or to psychological developmental vicissitudes. In the case of the psychotic, the conflict is between the ego and reality.

There is still another fairly well differentiated category of personality maladjustment which has received very illuminating consideration psychoanalytically, the so-called "neurotic character." In this category belong the various forms of psychopathy, certain types of criminalism, and addiction. Before entering upon a discussion of the psychoanalytic conception of the "neurotic character," it might not be out of place to refer briefly to one important difference between physically and psychically conditioned disorders. Now, in connection with physical illness, the physician would be very much surprised if he were to encounter in his patients a resistance to getting well, say nothing of a wish to be ill. And yet this is a regular experience in dealing with psychologically conditioned difficulties or disorders.

The wish to be ill is a basic characteristic of psychically conditioned disorders, whether these be of a mainly psychological or mainly somatic nature. The isolated symptom, as well as the more extensively organized symptom complex, reflect the compromise struck between an egodystonic, forbidden, and untolerated instinctual drive and the opposition of the ego. This ego-opposition to the direct and unmodified expression of the unacceptable instinctual drive relents in the course of time and in connection with the necessity of doing something about the distress and anxiety produced by the conflict which initiates the necessity for symptom formation. As a consequence to the ego's yielding to an otherwise unmanageable situation the symptom or illness as a compromise formation is accepted and in time defended and protected by the ego. As long as the underlying conflict remains unresolved, the wish to be ill, to retain the compromises achieved by the illness, remains an indispensable characteristic of every psycholog-



ically motivated symptom or illness. This is what has been termed the epinosic or secondary gain of illness. Now a paradoxical situation emerges which must appear as a curious phenomenon, indeed, to those who see in pathological conditions the mere invasion of the organism by noxious agents, of which the individual naturally would wish to rid himself and whose cooperation with the physician's efforts in this direction should, of course, be taken for granted. The paradox disappears once we truly understand the difference in the etiological categories between a psychologically and a physically conditioned illness. In the latter case we are correct in speaking of causes, in the former it is more correct to speak of motives for the illness. In a psychically conditioned illness, there is an anterior participation on the part of the patient in the creation of the illness. The neurotic symptom is the best that the patient can do in his effort to deal with a distressing subjective maladjustment, but obviously it does not solve the underlying problem. Indeed, when one observes the painful anxiety, the crippling inhibitions, and defeats of the compulsion neurotic, coupled with an unrelenting and obstinate persistence in hanging on to these symptoms, one wonders what possible advantage there could be in this substitute for a preëxisting difficulty. But apparently the terror and panic which the threat of an emergence of an unconscious sadistic impulse induces render the acceptance of the painful and crippling system of defensive reactions of the compulsion neurotic desirable.

Moreover, the neurotic symptom as a compromise outlet for a forbidden instinctual drive must of necessity contain both the substitutive and roundabout gratification of the impulse and the punishment for its indulgence. The pain and suffering which accompany the neurosis are indispensable conditions for its utility in dealing with the conflict. Herein, the neurotic manner of dealing with forbidden instinctual or Id tendencies differs from sublimation as a way of dealing with similar tendencies. Sublimations are likewise substitutive gratifications of Id tendencies, but these tendencies, when expressed by way of sublimations, have undergone a sufficient degree of desexualization, their indulgence is no longer in conflict with su-

per-ego injunctions, and thus they escape their punitive impositions.

To sum up, a psychologically conditioned illness constitutes the compromise struck between the conflicting tendencies of Id and ego; or putting it in different terms, between the claims of instinct and those of culture. It is a compromise which the ego accepts only after great initial resistance. But once accepted, it is defended and protected by the ego, which is willing to endure the pain of the illness along with the substitutive instinctual gratification which it makes possible. The wish to be ill becomes indispensable under these circumstances as well as the resistance to cure which we encounter in these cases.

Now there seem to be some individuals in whom this initial ego resistance to the emergence in action of forbidden Id tendencies does not take place. The ego from the very beginning permits itself to be permeated and characterized by these tendencies, sometimes in a more or less modified state, at other times as direct instinctual expression. Obviously it is here a question of a serious miscarriage in super-ego formation in connection with an inadequate dealing with the Oedipus situation. This is what constitutes the neurotic character, those troublesome, inefficient and frequently dangerous individuals who constitute the greatest challenge to psychoanalytic therapy and here and there its greatest therapeutic triumph.

The simplest way of indicating the difference between neurosis and "neurotic character" is to say that the latter constitutes an asymptomatic neurosis when contrasted with a specific neurosis of the conventional type. Or one might say that the neurotic character's total life performance constitutes the symptom of his neurosis. The individual traits of character are so many attenuated, microscopic symptoms of the sort that we are familiar with in the conventional clinical types of neurosis. While the psychoneurotic mainly "suffers out," subjectively, so to speak, his symptoms, the neurotic character lives them out in his daily behavior. It is obvious that this distinction is a relative one only since there are certain vicissitudes of a subjective as well as an objective nature which are common to both. But in the main the neurotic character reflects the pathology of his nature in everything he does, whereas the psychoneurotic is able to

a greater or lesser extent to mobilize his illness in time and space relationships. Part of the ego of the psychoneurotic is able, so to speak, to stand aside and view objectively the illness. This determines the differences between the two conditions as regards insight and attitude toward treatment. As regards the latter aspect of the situation it is well known that a neurotic character trait has to be metamorphosed into a symptom before it can be successfully subjected to psychoanalytic cure. The neurotic character, because of the permeation of the ego with Id tendencies and its tolerance of them, readily rationalizes such personal or environmental critique as he may be confronted with and never really possesses true insight. Ordinarily he comes for treatment only through external compulsion.

A number of classifications have been proposed for the differentiation of the neurotic character. The best, to my mind, is still the more general, namely, that neurotic characters might be divided into two types, the impulsive and the reactive. The former characterizes those individuals in whom primitive, instinctual or Id impulses are permitted a good deal of direct outlet with little or no modification. They include aggressive, antisocial, and criminal reactions as well as unrestrained appetitive indulgences such as alcoholism and drug addiction and overt homosexual practices of a polymorphous nature, including heterosexual as well as homosexual compliances in the service of a more general ego gratification (bisexual prostitution). The second group is a reactive group in which the character traits and indeed the total make-up of the individual constitute a system of defense against primitive impulse without specific symptom formation. The picture is that of a profoundly inhibited and socially shy and inadequate individual who in response to strong masochistic urges lives a life of continuous maladjustment, more as a nuisance than an active disturber of the social environment. While unconscious guilt and need for suffering is a marked characteristic of the latter type, the former does not entirely escape a similar motivation.

The difference is that punishment and privation alternate with indulgence, or that self-punishment injects itself into the very experience of indulgence. It is common in these individuals to carry indul-

gence to excess until whatever element of pleasure the indulgence might promise is vitiated by the painful effects of the excess. This is clearly illustrated in those criminals who after committing a crime seem to leave no stone unturned and miss no opportunity for a slip-up, until they are detected and punished for the crime. But ultimately, the goal of life and activity in the impulsive as well as the reactive type is suffering and defeat. Now the human being has always been subject to the types of distorted management of his nature that we described above, certainly since the beginnings of civilization. He has always resorted to various measures for the relief of the discomforts and the inadequacies which failure to manage the intrapsychic conflict brought in its wake. To review even very briefly the history of man's effort to deal with the difficulties of his own nature and to bring it into accord with the requirements of reality would carry us considerably beyond the scope of this paper. It would involve a review of his experimentations with magic and religion and with the early gropings after a more disciplined psychological medicine. But whatever these methods might have been, whether suggestion, persuasion, reeducation, or hypnosis, none could have as its objective anything beyond the removal of existing symptoms. Apart from the fact that they all ignored the unconscious sources of human motivation, their influence was limited to the conscious self, and with the exception of Freud's employment of hypnosis for effective-discharge purposes during the early stages of the psychoanalytic movement, they never reached unconscious sources of difficulty. The advent of psychoanalysis brought with it a radical shift of aim; the aim of therapy became the ridding of the individual of the need for symptom formation. A successfully completed psychoanalysis not only rids the patient of his symptoms, but brings about a degree of extension of conscious or ego control over unconscious impulse which eliminates the need for pathological methods for dealing with the internal conflict.

When Professor Freud was led, because of a deeper insight into the question of hypnosis than had been available up to that time, to an application of the technic of hypnosis to the release of pent-up systems of ideas of a high emotional value to the

patient—his so-called cathartic method—he did not foresee that a technic which was primarily intended as a therapeutic instrument would turn out to be the most reliable as well as the most revelatory technic of research into the nature of the human being.

Naturally, there is a reciprocal influence at work here. The wider therapeutic application has tended to deepen our knowledge concerning the nature of man, and the increase of knowledge has led in turn to an extension of the field of practical usefulness of psychoanalysis. One might, for instance, consider the beneficent possibilities of a general acceptance of the viewpoint that "normality," that is, the capacity for a healthy, adequate adjustment to the requirements of life in society, is not the natural birthright of man, but a dearly bought individual achievement in the face of tremendous obstacles. The successful evolution from the amoral and asocial state of infancy to a state of healthy maturity implies the adequate mastery of powerful tendencies of an opposite aim. Conversely, the various manifestations of difficulty or failure of adjustment to the requirements of civilized life reflect a yielding to a greater or less degree to the tendencies which oppose this process of growth and maturity.

Even in connection with the brief allusion to the nature of man as expressed above it is already possible to discern some of the underlying tenets of psychoanalytic theory. The concept "psychological" acquires a broadened and deepened meaning. It is not limited to phenomena of consciousness, but includes a wealth of significant psychological manifestations which belong to the life and activities of the unconscious, a region of the personality accessible to our vision only by special methods of approach, the methods of free association, and by hypnosis. Furthermore, psychological phenomena, in the psychoanalytic sense, are charged with a dynamic quality: they are energy carriers capable of affecting the feeling and striving and acting of the human being. Finally, psychoanalysis has demonstrated that not all psychological manifestations of the personality are subject to the laws of reason and logic. Only those psychological man-

ifestations which issue from the conscious self, the adjusted part of the personality, are subject to these laws. The manifestations of the unconscious, as, for instance, the rich and complex phenomena of the dream, do not heed any of the laws which govern the stream of consciousness.

A passing reference was made earlier in this presentation to the concept of the "Id," the primitive, instinctual reservoir which binds the individual to everything that has characterized the evolution of the human race. I shall not undertake at this point a detailed consideration of this important concept in the structure of psychoanalysis. But it should be obvious that the acceptance of this idea of a living and enduring past entering so largely into the shaping of the destiny of the individual must profoundly modify one's traditional notions concerning the characteristics of man. We have already indicated this when we stressed the idea that "normality," or "morality," or "social-mindedness"—in short, those various virtues which are cultivated and pursued in the service of man's need for adaptation to the demands of his social environment—cannot be considered as the natural heritage of man, but rather as a dearly bought achievement, a product of the adjustment of man's nature to the requirements of culture. Man's heritage is of an altogether different kind, and is primarily, if not exclusively, concerned with his needs as a biologic organism. In view of this it should not be difficult to find oneself in agreement with the psychoanalytic conception of the sexuality of man. Such a conception of the sexual or love life of man embraces not only its qualities of physiological craving and biological purpose, but also those of human value and idealized aim. It is in its very nature not limited to "genital functioning," but in its pregenital phases is antibiological and antisocial in nature, whereas in its sublimated phases it constitutes the source and inspiration of the most treasured values in the cultural heritage of man.

The practical significance of a general fertilization of contemporary culture by these few fundamental concepts of psychoanalytic theory can hardly be overstressed. It has already profoundly modified our thinking in many departments of life.

130 EAST 39TH ST.

# DEPARTMENT OF HEALTH DIAGNOSTIC CARDIAC CLINIC OF NEW YORK CITY\*

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**INTRODUCTION.**—The Department of Health Diagnostic Cardiac Clinic is a recent development in Health Department activities in New York City. Its main purpose is to determine the cardiac diagnosis and physical fitness for employment of children who apply for working papers and who are found to have some cardiac condition—a murmur, arrhythmia, or evidence of cardiac enlargement. It also endeavors to obtain medical supervision and vocational guidance, until the age of 17, for all children who have organic heart disease.

For the three years ending December, 1932, an average of 84,000 children between the ages of 14 and 17 have applied for working certificates yearly. At the time of their examination for working papers, about 1.3 per cent of these children were found to have cardiac abnormalities. The procedure has been to group these children into those with organic heart disease, who are either refused or granted limited working certificates, or into those with "functional abnormalities," all of whom are granted unlimited working certificates. This grouping, up to October, 1930, was made at the Department of Health Mercantile Office, where medical facilities, both as to the number of physicians and equipment for cardiac diagnoses, were inadequate.

The diagnostic cardiac clinic was created in the Fall of 1930 to overcome this difficulty and to reduce errors in diagnosis to a minimum. It is organized and equipped to examine 1,000 children a year. The equipment includes facilities for taking and developing teleroentgenograms and electrocardiograms.

**AFFILIATED AGENCIES.**—In establishing this clinic, it was found essential that interested organizations should assist in its organization, functioning, and support.

The clinic is operated by the Bureau of Child Hygiene of the Department of Health, in cooperation with the Heart Committee of the New York Tuberculosis

and Health Association and the Bellevue-Yorkville Health Demonstration.

A valuable service is given by the Employment Center for the Handicapped in supervising and in many cases obtaining suitable employment for the child with heart disease. The field nursing service of the Department of Health has rendered possible home visits to those children living in the five boroughs of Greater New York, while the Association of Volunteers and the Department of Education contribute workers to assist with the clinic procedure.

**ORGANIZATION AND PERSONNEL.**—The general plan of organization is illustrated in Chart I. The several agencies work through the medium of the Bellevue-Yorkville Health Center, where the clinic is housed. The chart shows the contribution of each agency. The squares with the broken lines (laboratory and employment service) indicate activities outside the clinic.

The personnel during the clinic sessions is made up of one physician, one nurse, three volunteers, a certificating officer from the Department of Education, and a part-time x-ray and electrocardiographic technician. The workers average about six hours a week in the clinic, with the exception of the nurse, who must spend an extra day a week on records, the doctor who spends only four hours a week, and the x-ray and electrocardiographic technician, who averages two and one-half days a week.

**CLINIC EQUIPMENT.**—It is important, in planning a cardiac clinic such as this, that sufficient space be provided so that the physician, the historian, and the conference nurse may all privately interview the patients.

This clinic is equipped with a waiting room to which the children are admitted, a private room for history taking, two dressing booths, two toilets with hand-washing facilities, an ante-room in which those who are ready may wait for the doctor, and an examining room.

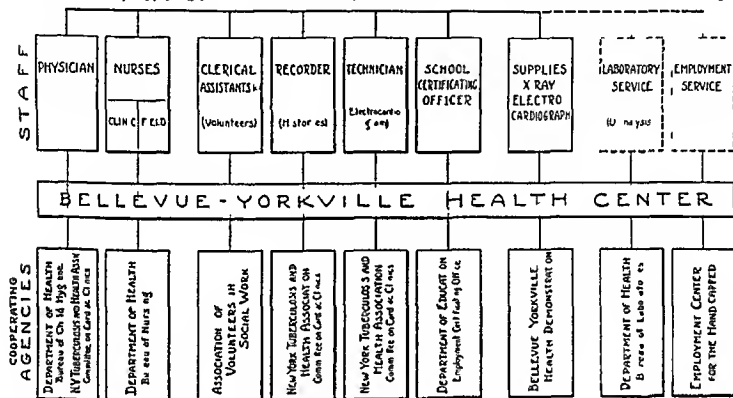
\* In cooperation with the Board of Education, the Heart Committee of the New York Tuberculosis and Health Association, the Employment Center for the Handicapped, and the Bellevue-Yorkville Health Demonstration.

The supplies for the nurse's use consist of a desk, scales for height and weight, thermometer set up, bottles for urine specimens, and record forms. Outing flannel coats are provided for the children, who strip to the waist for examination.

The supplies for the doctor's use consist of a desk, a viewing box for the x-ray films, an examining table, a stethoscope, a blood pressure machine, and tongue depressors.

physicians or clinics for correction before qualifying them. Those who have any cardiac abnormality, organic or functional, are referred to the Department of Health Diagnostic Cardiac Clinic. Here they are divided into two groups, those who have organic heart disease and those with functional abnormalities. The latter are all granted unlimited working certificates. The children with organic heart disease and who are under 16 years of age are

CHART I—PERSONNEL\* AND COOPERATING AGENCIES, DIAGNOSTIC CARDIAC CLINIC  
(For Children Applying for Work Certificates) Bellevue Yorkville Health Center New York City



\* Organized for examination of 1 000 children a year

† Ages 14-17 years

**GENERAL PROCEDURE**—The plan of procedure is illustrated in Chart II. When a child in New York City wishes to obtain working papers, he applies to the principal of the school he attends for a schooling record. The principal in turn refers him to a mercantile office of the Department of Health for a physical examination to determine his fitness. At the mercantile office, children of the proper age who have completed the required amount of schooling and are found to be in good physical condition, are granted unlimited working certificates\*. Those with defects other than cardiac are referred to their private

refused certificates. Those over 16 who show good cardiac reserve are granted limited working certificates and are referred to the Employment Center for the Handicapped for work supervision. Those with poor reserve are refused certificates.

The clinic has been very desirous of winning the cooperation of the private physicians and clinic physicians and extending to them any help which it has to offer. For this reason a copy of the complete record including a strip of the electrocardiogram, a tracing of the tele-roentgenogram and recommendations are sent upon request to any private physician or clinic whose patient has been examined.

**CLINIC PROCEDURE**—Each child must report twice before a diagnosis is made. On the first visit, the child's history is obtained, an x-ray and electrocardiogram are taken, and a urine specimen is procured. His height and weight are re-

\* See Section 635 Law in regard to the physical examination of applicants for employment certificates. Children may go to work in New York City provided they are 14 years of age and have completed 8th when they are 15 and have completed 6th or when they are 16 and have passed the physical requirements test regardless of school grade. When a minor from 16 to 17 years of age is not physically sound but in the opinion of the physician may safely engage in certain occupations he may be granted a certificate of limited physical fitness.

corded. Information for the Department of Education reports is obtained at this time. The child is then directed to return to the clinic at the next session.

On his second visit, the child's temperature, pulse, and respiration are taken. His history, x-ray, electrocardiogram, and urine reports are sent to the doctor. The child is then examined by the doctor, who dictates his findings and diagnosis to one of the volunteer workers.

Not infrequently in the course of the examination, abnormalities other than cardiac are observed. Among these are pathological urines, enlarged thyroids, and chest conditions. When this is the situation, the nurse refers the child to his private physician or to a clinic with instructions to bring a written statement as soon as the defects are corrected or under care. The working certificate is held up until this note is received.

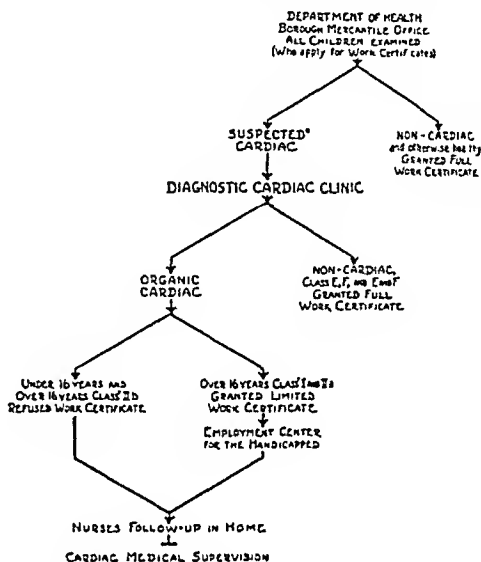
Those children who are eligible for limited certificates are referred to the Employment Center for the Handicapped for vocational guidance and approval of the positions which the children have been promised by employers. If the positions are not on the approved list for cardiac children, the Employment Center for the Handicapped sends an investigator to determine the suitability.

Everyone granted a limited certificate is required to report to the cardiac clinic for reexamination every six months until he is 17 or whenever he changes his work. If he is still considered by the doctor as eligible for a limited certificate, he is sent again to the Employment Center for the Handicapped.

**THE PHYSICAL EXAMINATION.**—The examination is made by a cardiologist. The physical record recommended by the Heart Committee of the New York Tuberculosis and Health Association is used. The following examinations are omitted: retinoscopy, sinus examination, percussion of cardiac dulness, and chest and abdominal measurements. The heart is examined in the upright and recumbent positions and also after exercise. The electrocardiogram and x-ray interpretations, as well as urine findings, are charted. No further tests are included. The complete cardiac diagnosis is recorded—etiological, anatomical, physiological, and functional. The latter is determined on the history of ability to climb stairs and on the impression of the

examining physician. No functional test is used. The organic diagnosis is based on the criteria set forth by the Heart Committee of the New York Tuberculosis and Health Association. The borderline case with a systolic murmur at the apex is examined fluoroscopically, and where indicated, the examinations are repeated.

CHART II.—DISPOSITION OF SUSPECTED\* CARDIAC CHILDREN APPLYING FOR WORK CERTIFICATES



\* All children, ages 14-17, with Cardiac Abnormality.

† Class E: Abnormal Signs and Symptoms.

Class F: Potential Cardiac (Rheumatic History).

Class I: Organic Cardiac-Functional Capacity Un-

impaired.

Class 2a: Organic Cardiac-Functional Capacity

Slightly Impaired.

Class 2b: Organic Cardiac-Functional Capacity

Greatly Impaired.

**THE DUTIES OF THE PERSONNEL.**—The choice of a physician for the cardiac clinic was considered most important. As this clinic was a new development of the Department of Health, it was necessary to have a physician who could help organize the clinic in all its details. The physician not only makes all the examinations and determines when children are eligible for working papers, but continues to work closely with the Department of Health and co-operating agencies in the development of this clinic.

The selection of a supervising nurse is of equal importance, since she is directly responsible for helping with the organization of the clinic and ascertaining that the routines are properly carried out.

The clinic nurse is responsible for the general routines in the clinic and also for

interviews with both child and parent. It is of considerable importance in a diagnostic clinic which does not give medical supervision to impress on the parents the necessity of medical care for children with organic heart disease. For this purpose parents are sent instructions to be present when their children are examined. Each parent is interviewed by the conference nurse who not only advises about medical supervision but also concerning any social or economic problems. Only those families are visited who neglect to obtain medical care for their children, or where there are special social or economic difficulties. Information concerning medical supervision is confirmed by form letters sent to the private physicians or clinics with whom the children are reported registered, or by telephone calls when the letters are not answered.

Volunteers have been found most useful in this clinic. One is trained to take histories. A second volunteer who assists the nurse is given the responsibility of directing the children to the x-ray and electrocardiographic technician, of collecting and labeling urine specimens, and of weighing and measuring the children, and a third volunteer takes the doctor's notes. The certificating officer of the Department of Education is responsible for ascertaining whether or not the children are eligible in regard to age and grade for working certificates. She secures the children's school records and birth certificates for this purpose. She notifies the principal when the children are expected to return to the clinic and makes reports to the principal about the diagnoses of the children and whether they have been granted working certificates. The certificating officer also issues working certificates when they are recommended by the doctor.

**COST OF EXAMINATION.**—The expense of the Department of Health Diagnostic Cardiac Clinic has been estimated according to the initial and operating costs. The only omission has been the cost of the x-ray apparatus and of chairs and desks, all of which were purchased for the use of the tuberculosis clinics. For the purpose of this study, the cost of all equipment is estimated as nearly as possible according to prices quoted in 1930 which amounts to \$1,851.59. As the clinic was set up to examine 1,000 children a year, the operating cost has been estimated on this average,

making the expense of a complete physical examination, including the electrocardiogram, urinalysis, and x-ray, \$3.20 per child.

**RECORDS AND FORMS USED.**—The records used have been those of the Heart Committee of the New York Tuberculosis and Health Association. These are in three sections: history, physical, and progress record. In addition to these records, mimeographed forms of instructions to the child, parent and school nurse, as well as correspondence forms with the private physician are also used.

#### SUMMARY

The organization, procedures, and cost of maintenance of the diagnostic cardiac clinic of the Department of Health of New York City are described in detail in this report. This clinic was created to reduce to a minimum errors in the cardiac diagnoses of school children who apply for working papers. It was believed that the diagnosis of organic heart disease in a large percentage of the cases was incorrect and that therefore many children were unjustifiably deprived of employment. An analysis of the data accumulated in the last two years proves that assumption to have been correct. It shows that the diagnosis under the previous system was wrong in over 50 per cent of the cases.

The services of the clinic were extended beyond the original purpose. Many children with organic heart disease were not under medical supervision, and the clinic felt obligated to encourage such care for them. For this purpose the clinic has developed a consultation service between the nurse and parent. To help the doctor and also the child, the entire clinical data and recommendations are made available to the physician in charge of the child. The success of this plan of procedure is evidenced by the increasing cooperation of the physician with the clinic.

Another valuable service to the child is the work supervision and vocation guidance rendered by the Employment Center for the Handicapped. The information which the child receives about the types of employment and working conditions for which he is suited should be of value to him in choosing employment after the age of 17, when he is beyond the control of the clinic.

## HEART DISEASE AMONG CHILDREN OF SCHOOL AGE

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The usual method of measuring the health of a people is by means of the death rate; and yet, from a broad point of view the prevalence of sickness is certainly of greater social significance. In order to add to the limited amount of information that is available about general morbidity, the New York State Department of Health conducted, in 1927, a survey in certain rural sections in which over one hundred physicians voluntarily reported each week the cases of the more important diseases in their practice. This survey was followed in 1928 by a more intensive study in one county—Essex.

Among the several interesting facts disclosed by both surveys, the importance of heart disease as a cause of sickness was brought out in a particularly emphatic manner. In the first survey, that of 1927, the physicians observed 4,123 cases of heart disease, a larger number than the total of reportable communicable diseases—3,212. In Essex County, 535 cases of heart disease were seen by the physicians in the course of the year 1928, and only 312 cases of the reportable group.

These findings led the Department, in 1931, to make a comprehensive investigation of the morbidity from heart disease in a general group of the population and among children of school age.

The purpose of the present paper is to summarize the results of the school survey which was made possible by the kind co-operation of the State Department of Education and the school physicians of twelve cities and large villages: Albany, Binghamton, Bronxville, Jamestown, Mount Vernon, Niagara Falls, Ossining, Oswego, Peekskill, Rome, Troy, and Utica.

By the end of the academic year 1930-1931 these school physicians reported 442 cases, diagnosed as a result of routine and, in some cases, of special examinations. The number of children examined was approximately eighty-six thousand; the incidence rate was, therefore, 5 per 1,000. The 1930 report of the White House Conference stated that "figures generally ac-

cepted, determined by intensive studies on large groups of children, chiefly in the school age, place 0.5 to 1.5 per cent of children among the five functional classifications of cardiac involvement generally recognized." Thus, our rate corresponds to the lowest in the range of figures found in other surveys. Applying this rate to the estimated population of the State between the ages of 5 and 20, we obtain 16,172 as the probable minimum number of cardiac cases among children of school age.

**GENERAL RESULTS.**—For purposes of discussion of the several types of heart disease among children, we have added to our group 192 cases under 20 years reported by the physicians who participated in the more comprehensive general survey of the morbidity from heart disease. The distribution of the 634 cases according to sex and age was as follows:

TABLE I.—CASES OF HEART DISEASE IN SCHOOL SURVEY OF 1930-1931 BY SEX AND AGE

Age	Total	Male	Female
Total .....	634	282	352
Under 5 years.....	14	9	5
5 to 9 years.....	160	71	89
10 to 14 years.....	258	107	148
15 to 19 years.....	197	93	104
Not stated .....	8	2	6

The largest number of cases was reported in the 10- to 14-year group, exceeding the number in the younger group, 5 to 9 years, by one-half among males and two-thirds among females.

**ETIOLOGY.**—In 74 cases the causative factor of the cardiac defect was not stated. In the remaining 560 cases, rheumatic infection was indicated in 302 instances (54 per cent): rheumatic fever, 175; tonsillitis, 109; and chorea, 18. Other acute infections were specified in 62 cases (11 per cent): pneumonia, 21; scarlet fever, 18; diphtheria, 12; influenza, 9; typhoid fever, 2. Cases of congenital heart disease numbered 40 (7 per cent). "Nervous heart," including a number of functional disorders, was given in 20 cases (4 per cent), thyrotoxicosis, 19 (3 per cent); carious teeth, 7 (1 per cent). In 81 cases



TABLE II—CASE OF HEART DISEASE IN SCHOOL SURVEY OF 1930-1931 ACCORDING TO ETIOLOGY BY AGE

Etiology	Total	Under 5 years	5 to 9 years	10 to 14 years	15 to 19 years	Not stated
Total	634	14	160	255	197	8
Congenital	40	7	7	14	11	1
Rheumatic infections	302	6	85	130	78	3
Rheumatic fever	175	4	41	77	51	2
Tonsillitis	109	2	38	49	19	1
Chorea	18		6	4	8	
Other causes	62	1	13	23	24	1
Unknown	20		8	6	6	
Not stated	19		1	5	12	1
Other causes	7		1	5	1	
Unknown	15		5	1	14	
Not stated	14		5	6	3	
Other causes	81		17	28	34	2
Unknown	74		23	37	14	
Not stated						

(14 per cent) the etiology was said to be unknown

The weight of rheumatic infections was, in general, inversely related to age. In the youngest group, under 5 years, this factor was specified in 43 per cent of the cases, in the next age group, 5 to 9 years, rheumatic infection was indicated in 62 per cent of the cases, at 10 to 14 years, 60 per cent, while in the oldest group, 15 to 19, 43 per cent. Of the 15 cases of hypertension, 14 were in the 15 to-19 year group and only one in the preceding group, 10 to 14.

**PATHOLOGY**—In 542 cases (or 95 per cent of the cases in which reference to etiology was made), the type of cardiac damage was valvular disease—mainly mitral alone, 446 cases, combined with the aortic, 29, and with the tricuspid, 14. Damage to the myocardium was found in 24 cases (4 per cent). There were 3 cases of aortitis and 2 of pericarditis. In 63 cases no mention was made of cardiac damage.

Table IV shows the distribution of cases according to etiology and pathology.

**OTHER FINDINGS**—We shall next summarize briefly the remaining facts secured from the questionnaires.

In 312 cases, information was given regarding heart disease among other members of the family 78 "yes," 234 "no." In 105 cases no information was given regarding treatment. In the remaining 529 cases the questions relating to treatment were answered as follows:

	Total	Drugs	No drugs
Total	529	141	388
Rest prescribed	303	124	179
Restricted activities	150	32	118
Occasional rest in bed	90	54	36
Prolonged rest in bed	63	38	25
Rest not prescribed	226	17	209

More than one-fourth of the children (181) had their tonsils removed, abscessed teeth were extracted in 8 cases, and in one case thyroidectomy was performed.

TABLE III—CASES OF HEART DISEASE IN SCHOOL SURVEY OF 1930-1931 ACCORDING TO PATHOLOGY BY AGE

Pathology	Total	Under 5 years	5 to 9 years	10 to 14 years	15 to 19 years	Not stated
Total	634	14	160	255	197	8
Damage to valves	542	9	147	233	146	7
Mitral valve	446	8	125	189	119	5
Aortic valve	23		6	9	8	
Tricuspid valve	1			1		
Mitral and aortic valves	29		8	13	7	1
Mitral and tricuspid valves	14	1	2	6	5	
All valves	6			3	3	
Valve not stated	23		6	12	4	1
Damage to myocardium	24	3	4	6	11	
Aortitis	3	1	1	1	1	
Pericarditis	2	1				
Not stated	63		8	15	39	1

TABLE IV.—CASES OF HEART DISEASE IN SCHOOL SURVEY OF 1930-1931 ACCORDING TO ETIOLOGY AND PATHOLOGY

Etiology	Pathology					
	Total	Damage to valves	Damage to myocardium	Aortitis	Pericarditis	Not stated
Total .....	634	542	24	3	2	63
Congenital .....	40	30	5	2	...	3
Rheumatic infections .....	302	282	5	1	1	13
Rheumatic fever .....	175	168	2	1	1	3
Tonsillitis .....	109	98	2	...	...	9
Chorea .....	18	16	1	...	...	1
Other acute infections.....	62	50	6	...	1	5
Nervous heart .....	20	10	2	...	...	8
Thyrotoxicosis .....	19	4	1	...	...	14
Carious teeth .....	7	5	...	...	...	2
Hypertension .....	15	1	1	...	...	13
Other causes .....	14	13	1	...	...	...
Unknown .....	81	76	1	...	...	4
Not stated .....	74	71	2	...	...	1

## CONCLUSION

Health surveys in schools are of comparatively recent origin, but sufficient knowledge has already been accumulated to serve as a basis for constructive work. It has been estimated that practically 75 per cent of all cases of heart disease develop in children under 10 years of age. The implication of this statement is most important. The problem of our high mortality from heart disease should be attacked in the age period where most of the cases have their inception. Here the work of the school physician could be made of utmost importance, since it is

he who watches over the health of the children and has, therefore, an opportunity to discover the first symptoms, often long before the disease manifests itself sufficiently to attract the attention of parents.

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## A HELPFUL PLAN

An excellent method to provide a community supply of accessories needed in the medical care of the sick is reported in *Health News*, published by the New York State Department of Health at Albany. The plan is to establish a community loan closet, and it has been used with signal success by the village of Baldwinsville, Onondaga County. The project was developed by the local relief committee, a group of interested lay persons representing all classes in the community, which was organized by Mrs. George Campbell, chairman.

Nearly 200 men and women braved subzero weather to attend a community card party sponsored by the committee for the purpose of securing medical requisites for the poor. The price of admission was some article of use in the care of the sick. Donations including blankets, quilts, towels, sheets, and pillow cases, are said to have covered the platform of the village hall and to have taxed to capacity two six-foot wooden cabinets. In addition, sums of money were contributed.

These supplies are to be kept in the village

hall for use by the village nurse and local physicians in treatment of the indigent sick.

While this loan closet was developed for the care of indigent sick, supplies may well be lent to any family during illness, the equipment to be returned when there is no further need for it.

Without waiting for any elaborate red tape or staff of investigators, the St. Louis County Medical Society has hit on a simple plan to reduce charity grafting. Every applicant for free service is asked to make an affidavit as to his financial condition. "Do you own real property?" he is asked. "Are you, or any of your family, employed?" "What wage or salary?" "Have you a bank account?" "State your income." "How many dependents?" The paper can be filled out in ten minutes, and the applicant is required to sign it and take his oath before a notary that it is correct. And what is the result of this plan? Charity abuse at the County Hospital has dropped 60 per cent.

## THE FAILING HEART OF MIDDLE LIFE

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It will be well to point out at the beginning what is to be understood by the term "failing heart." It is not meant to be confined exclusively to the shortness of breath on exertion which leads in the later stages to edema and general anasarca but is to include any sign that the heart may give to indicate that its function is disturbed. This will comprise various sensations over the heart such as pain, pressure, or palpitation, spontaneous attacks of dyspnea, and also certain spells of dizziness. Furthermore it may be considered foolish to labor the question of what is middle life, but after giving much attention to it, the answer does not seem to be so easy. For the purpose of this discussion the years from thirty-five to sixty have been used, admitting that at thirty-five many are still young and at sixty some are not yet old.

During this stretch of years we will find patients with signs of failing heart who are suffering from various etiologic types of heart disease (Table I). In the earlier years of middle age there are many with rheumatic valvular disease. Some of these have carried the condition since childhood, most of them since before twenty years of age. These patients continue to appear in considerable numbers until the age of fifty, but after this they are relatively few, most of them having died. After forty years

them in number. By the age of sixty, practically all of the syphilitic cases have died.

It is rare to find arteriosclerotic forms of heart disease before the age of forty, though it is not a great rarity. Every physician has probably seen at least one such case. After forty the frequency of this condition increases, and after fifty it is so great that these patients comprise well over half of all cardiac patients between the ages of fifty and fifty-nine.

Another small group should be mentioned. Those with cardiac disease associated with hyperthyroidism. This is often found before the time of middle life. It is most frequent in those between thirty-five and forty-five, but it is found with diminished frequency until the late fifties.

In summary, then, from thirty-five to forty years of age there will be almost entirely rheumatic cases with a few due to hyperthyroidism and a few to syphilis. From forty to fifty, half of the patients will be rheumatic, the other half chiefly syphilitic and arteriosclerotic in about equal numbers, with a small number of hyperthyroids. From fifty to fifty-nine the patients will be more than half arteriosclerotic, with the other half made up chiefly of syphilitic and rheumatic cases in about equal numbers, with a very few suffering from thyroid disease.

Having thus briefly sketched a picture of the etiological types of heart disease which will appear in patients during middle life, we shall now discuss the symptomatic manifestations of the failing heart in these groups. It is better to consider them in this way by etiologic groups because there are certain special differences in the clinical pictures presented by the patients in each group when they develop symptoms of failing heart.

The youngest patients, those with old rheumatic valvular disease will have probably known of the presence of this condition for many years but will have been little troubled by its presence. Some few may not even have known that they had heart disease. Some will have been troubled

TABLE I—APPROXIMATE FREQUENCY OF CHIEF ETIOLOGIC VARIETIES OF HEART DISEASE PER 1,000 CASES SEEN DURING MIDDLE LIFE\*

Age	Total	Rheumatic	Thyroid	Syphilitic	Arteriosclerotic
35-40	185	151	15	17	2
40-49	390	201	20	87	82
50-59	425	75	5	87	258
Total	1 000	427	40	191	342

\* These figures are not the result of a special investigation but represent a combination of figures obtained from several sources.

of age a few patients with syphilitic aortitis and valvular disease are found. They are many fewer than the rheumatic cases at this age, only a little more than one third as many. After fifty, however, the rheumatic cases are fewer so that syphilitic cases in the older patients slightly exceed

by increasing shortness of breath, and some will have developed auricular fibrillation accompanied by shortness of breath on moderate exertion. These patients who have already developed symptoms, merely carry on into middle life the disturbances which they have begun before and do not properly belong in this discussion. Their disease may progress and the symptoms become worse, but this has little to do with the age of the patient; more with the activity of the rheumatic disease or the advanced degree of the valve lesion.

We are especially concerned with those who enter into middle life with valvular disease but without symptoms of cardiac dysfunction, perhaps even without knowledge of its presence. It has been estimated that there are 60,000 adults in New York City who are carrying about an unsuspected rheumatic cardiac disease. Some of these will develop symptoms as a result of an acute or subacute recurrence of rheumatic activity. A majority, however, will carry the damaged valves through the fourth decade and many through the fifth. Some of these patients develop symptoms of failing heart because of a low-grade sub-symptomatic rheumatic activity in the heart valves producing a marked degree of stenosis. Most of them do not do so until coronary arteriosclerosis complicates the picture. The symptoms of these patients are in no way different from those of other patients with arteriosclerotic coronaries, except that the heart tends much more frequently to develop insufficiency with congestive symptoms than in pure arteriosclerosis where the handicap of valvular disease is not present. Cardiac insufficiency in these patients develops slowly and slowly increases in severity. It is probably for this reason that so few of them survive the fiftieth year.

Syphilitic heart disease develops most insidiously, and unless the patient is subjected to physical examination from time to time, there will be a period of from ten to twenty years following the infection during which he will not know of the developing cardiac condition. He may have occasional attacks of palpitation due to premature beats or to paroxysmal tachycardia which last for a few minutes or intermittently for a few days or weeks. For the most part the syphilitic disease is silent until it has progressed from an aortitis to the development of aneurysm or

of a free aortic insufficiency due to a destructive lesion of the valves. These conditions usually produce symptoms between the years of forty-five and fifty-five, though occasionally earlier and sometimes later.

The symptoms of aneurysm are so varied in its earlier stages that it is not possible to go into detail here, but it will suffice to emphasize that it is a thing to be thought of when a man of middle age complains of dyspnea, cough, hoarseness, or difficulty in swallowing, for which no cause can be found in the heart or lungs. To establish the diagnosis by x-ray should not be difficult if only we will think of the possibility.

Syphilitic valvular disease has two chief manifestations: Shortness of breath and pain. The dyspnea may come on gradually over a period of from four to six months, and by this time, if not sooner, it will have reached a degree which will prevent most ordinary activity. The strikingly rapid progression of the dyspnea in these cases is in marked contrast to the usual course of rheumatic aortic insufficiency. The pain with syphilitic aortic insufficiency is mostly a result of the involvement of the mouths of the coronary arteries in the aortitis. Their mouths may become more or less closed off and the myocardium as a result suffers from ischemia and degeneration. The pain is somewhat like that of coronary arteriosclerosis, but it is less often the immediate result of effort than a spontaneous paroxysm. These paroxysms are not apt to be as prostrating and prolonged as is usual for those due to coronary thrombosis but still may be quite severe. One may be inclined to feel that a thrombosis has occurred during some of these attacks, especially if they lead to prompt death, but the pathological examinations do not demonstrate this to have occurred.

These patients at their age may, of course, have a complicating coronary arteriosclerosis, and if this is present, a thrombosis may really occur. The coronaries of most syphilitic hearts are relatively free from arteriosclerotic disease, but with aortic valve involvement it is common for the aortitis to involve their aortic orifices. This coronary occlusion and the resulting muscle degeneration afford the most probable explanation for the rapid progress of cardiac insufficiency in these patients once it sets in.

Patients who develop heart disease from hyperthyroidism do so almost exclusively by one mechanism, that is, through the development of auricular fibrillation. We must distinguish between the cardiac symptoms associated with hyperthyroidism and the more definite disturbances which can be designated by the term "disease." Tachycardia and palpitation in these patients do not constitute evidences of heart abnormality. The increased metabolism together with the increased receptivity of the sensorium serve to explain these symptoms. A rhythmia of the extrasystolic type may occur, however, and also paroxysmal tachycardia, usually of auricular or nodal origin. These are not serious or important cardiac disturbances unless the tachycardia persists or appears overfrequently, for only under such circumstances does rhythmia seriously interfere with the cardiac reserve. Auricular fibrillation, too, can occur in a paroxysmal form in these patients, but for a similar reason it is only when attacks are frequent or when it becomes permanent that it assumes much importance.

These rhythmias are due to the toxic effects of hyperthyroidism upon the heart muscle or upon the cardiac nervous mechanism. In patients under forty years of age they usually indicate a severe grade of thyroid disturbance, but in older patients they may occur with lesser grades of toxemia, probably because the older myocardium is more susceptible. Permanent auricular fibrillation is a matter of great importance, especially if it goes untreated for a time, for it leads to a severe cardiac insufficiency with visceral congestion and edema and eventually to cardiac enlargement with interstitial fibrosis. With treatment the heart can usually be kept slowed and the cardiac reserve improved, but the enlargement and the fibrosis remain and constitute the basic pathology of the hyperthyroid heart. As coronary arteriosclerosis comes on this adds to the difficulty in maintaining adequate cardiac reserve and the majority of these patients die of cardiac insufficiency before fifty-five years of age.

Though rare instances of coronary arteriosclerosis occur before forty years of age, it is not to be expected until at least forty-five years and not really expected until ten years later than this. About 15

per cent of all cases occur between forty and fifty and 44 per cent during the next decade, so that by sixty years, the end of middle life, we have collected 60 per cent of all cases.

The initial manifestations of arteriosclerotic heart disease are varied and depend somewhat upon the age at which they begin. In the younger age groups the first symptoms are usually anginal, either the angina of effort, first showing itself as pain or precordial discomfort on walking. More rarely the severe spontaneous attacks due to coronary thrombosis may be the first manifestation. Another though less common type of onset is with rhythmia, either premature beats or auricular fibrillation. A rhythmia will often accompany or follow anginal symptoms when the disease starts in this way. Cardiac insufficiency with dyspnea on effort and with or without edema is a rarer mode of onset in patients under fifty years of age, though it may follow coronary thrombosis. Cardiac insufficiency is more common in older patients, probably because it demands a more extensive myocardial lesion than develops at an earlier age. Coronary thrombosis in younger individuals is more likely to be followed by a good recovery than in those who are older. It is not uncommon to find a practically complete recovery, though there will often be a residue of the angina of effort or more rarely of cardiac insufficiency.

Patients under fifty years of age who start with the angina of effort may improve greatly and even recover entirely. It is more common, however, for them to have a certain amount of residual symptoms. After a time they are likely to develop coronary thrombosis, no matter whether their anginal symptoms have persisted or have been entirely recovered from. It is not definitely known whether those patients who have entirely recovered are any less liable to have thrombotic attacks than those who have continued to have a certain amount of pain on effort. I am certain that neither the amount of pain nor its ease of production can be taken as an indication of the severity of the lesion or of the liability to thrombosis.

Patients after fifty years of age often develop as the first sign of failing heart due to arteriosclerotic coronary disease, the syndrome of cardiac insufficiency with shortness of breath or fatigue. They may

also, as with younger patients, first show the angina of effort or an attack of coronary thrombosis or perhaps arrhythmia. The Adams Stokes' syndrome due to heart block, with dizzy or faint spells and possibly convulsions, is occasionally the mode of onset, but this is a relatively rare condition. Paroxysmal dyspnea occurring especially at night is another rare mode of onset in the older middle aged patients and has been called cardiac asthma. The underlying pathology of this last condition is undoubtedly coronary arteriosclerosis, but it is not clear what may be the reason that it sometimes has this peculiar manifestation. Coronary thrombosis at this age is more liable to be fatal and is less commonly followed by complete recovery. It is more liable to leave symptoms of cardiac insufficiency or the angina of effort.

The contribution of hypertension to the failing heart of middle life is a real one, though it is much more important as a contributing factor in the symptomatology of arteriosclerotic heart disease than as an isolated feature. Hypertension will give rise to cardiac enlargement but symptoms will not arise from the heart unless enlargement reaches an extreme degree which is uncommon, or unless arteriosclerotic coronaries make impossible proper nourishment of the hypertrophied muscle. Cases with hypertension usually develop symptoms after fifty years of age, and the symptoms are typical of coronary arteriosclerosis. Cases with uncomplicated hypertensive cardiac enlargement are sometimes subject to premature beats and paroxysmal tachycardia and auricular fibrillation. They may rarely develop slight symptoms of cardiac insufficiency. As long as coronary disease holds off, these patients do not usually suffer from cardiac symptoms. It must be emphasized that in these patients the arteriosclerosis affects predominantly the arterioles and smaller arterial branches rather than the main and larger divisions, so that thrombosis is less frequent than without hypertension.

This practically completes the picture of the failing heart in middle life. It will be seen that it involves several different etiologic varieties of heart disease. It is a gradual process which does not progress rapidly after its first appearance, except in the case of syphilitic valvular disease with failure, or as a result of coronary thrombosis. The outlook, then, should not

be pessimistic for the patient will probably survive by many years the date of his first symptoms. There is, of course, in arteriosclerotic cases the danger of a fatal attack of coronary thrombosis. This danger must be recognized, but it should be faced with equanimity by both the doctor and patient, for it may be postponed for many years. One should remember that a first attack will probably be survived, for only 20 per cent of cases die in their first attack. Even after one attack has occurred, the second may still be postponed for years, and 70 per cent of second attacks are survived.

To conclude, a word about treatment should be said. The use of digitalis in the patients with symptoms of cardiac insufficiency is in no way affected by the etiology or by the type of valvular or myocardial involvement. There may be cases that do not improve under treatment, but this does not necessarily indicate that digitalis is inactive—merely that its activity is unequal to the task in this particular case. Its action may be just short of the necessary degree and some additional procedure, such as tapping the chest or abdomen or using a diuretic to remove edema, may enable its benefit to become manifest.

It seems that there is more than ordinary danger involved in giving a toxic dose of digitalis to a patient who is suffering from cardiac failure after a coronary thrombosis. These patients are usually hanging so near the edge of life, when their lungs fill up with râles or their liver or peripheral veins become swollen because of increased venous pressure, that the circulatory disturbance due to a tachycardia or to the very frequent premature beats which may result from over-digitalization may be sufficient to turn the balance against them. It is not necessary to avoid digitalis in these patients, for it often seems to be beneficial in relieving pulmonary congestion; but it is most important to avoid a toxic dose, and this means not more than 10 cat units of digitalis in the first twenty-four hours for a patient of 150 lb. and after this not more than one every eight hours. At this rate of administration toxic effects will not often appear suddenly. Toxic rhythms seem especially liable to arise in patients who are receiving digitalis along with one of the purin derivatives, caffeine, theobromine, or theophyllin.

Digitalis is often of demonstrable value in ambulatory patients who are complaining of moderate dyspnea. It probably helps by its "tonic" or strengthening effect upon the muscle contraction. It is obligatory in patients with auricular fibrillation or flutter accompanied by rapid heart beat, no matter whether unusual dyspnea is present or not, for these patients benefit by having the heart rate slowed and maintained so. It may be useful for its strengthening of the muscle contraction in patients with complete heart block complaining of dyspnea, but when incomplete heart block is present, it may produce Adams Stokes' attacks which may offset the improvement of the cardiac insufficiency.

In coronary arteriosclerotic patients, or in others who are suffering from the effects of deficient blood flow, drugs of the purin group may be expected to be helpful. Theophyllin is the most active, theobromine is next, and caffeine a poor third in this field. These drugs dilate the coronary vessels so as to increase the blood coming through the more healthy collateral anastomoses, into muscle areas which are being poorly nourished by their own narrowed arteriosclerotic branches. The greater the number of healthy branches that remain, the more likely it is that these drugs will give benefit: The more diffuse the disease, the less chance that they will help. Perhaps it is for this reason that they are more useful in patients with the angina of effort than in those with cardiac insufficiency, for these latter usually have more extensive coronary changes.

Owing to its relative freedom from gastric irritation, theophyllin ethylenediamine is the most satisfactory preparation to give, and the dose may be 3 gr. three times daily at first, later reducing to 1½ gr. four times daily, and still later to 1½ gr. three times daily. This drug should be used for at least a month, and then it may be stopped for a time to be resumed if symptoms promptly increase. It is the author's belief that it is helpful when given for two or three weeks of each month as long as symptoms persist. It may even be of value in coronary thrombosis and should be given in 3-gr. doses by mouth or intravenously every four hours.

Finally a word about rest and exercise. Rest should be graded to the degree of

cardiac insufficiency. A patient who becomes dyspneic on walking two or three blocks is probably better off not to exert himself to this degree more than once or twice daily. I see no advantage to such a patient from avoiding lesser grades of activity. He is better to be up and about the house, even if this involves climbing one flight of stairs a day, than he will be when confined to bed. We are not dealing with an acute condition in these patients, and absolute rest is seldom indicated; at least, in the author's opinion, never for long periods of time.

Patients with the angina of effort also afford a problem as to the amount of rest to prescribe and the amount or activity to allow. If the condition has come on in the course of a few days or is increasing rapidly in severity, we should fear the approach of a thrombotic attack. This would call for the avoidance of any mental and physical strain and would indicate restriction to the house until the danger seems past. If the condition has come some weeks or months previously and is not increasing in severity, there does not seem much reason for avoiding any activity, including business, unless these activities demand periods of physical or mental strain. Walking, if short of the amount which produces pain, and business activity which is not fraught with tense or emotional moments do not seem harmful.

Patients who have had thrombotic attacks must remain in bed as long as fever persists and for at least three weeks more if the attack produced little prostration. After more prostrating attacks a proper minimum would be four or five weeks after the fever has gone. When the patient is allowed up he should be managed as one would treat a pneumonia convalescent, taking at least two weeks from bed to walking about on the floor, another one or two weeks before going out. At this time we must individualize patients depending upon the degree of their recovery and the presence of residual cardiac symptoms and signs. The electrocardiogram, as it returns to a more normal form after an attack, is sometimes a useful guide at this time to the process of healing in the myocardium.

## ABDOMINAL PAIN IN CHILDREN

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Pain in the abdomen is a common complaint among older children. It is so frequent that we may neglect its importance and fail to heed a danger signal. Pain may run the gamut as a symptom in a great variety of conditions. All the way from a bubble which gives the baby colic, to the sharp pain of an inflamed appendix, the symptom of pain in the abdomen demands our attention.

The seriousness of this symptom varies, not always in proportion to its severity. Interpretation of its significance in children is difficult. Their description of the character and location of the pain is vague, or they forget the details when the pain is gone. The memory of it fades rapidly—so the past history is not always helpful. Nausea may mean pain to a child. Different types of children react very differently to pain stimuli, so that one must constantly be on guard against exaggeration or even romancing. The nervous child may be very sensitive to pain, but the phlegmatic child also may give us a wrong impression by too little evidence of suffering.

Are we dealing with a functional disturbance, or has the child a disease of some intra-abdominal organ? To answer these questions we frequently need every help at our command.

No child with the symptom of abdominal pain should be dismissed from mind without an attempt to explain why he has pain. Frequently the explanation is not easy. Too often the diagnostic position is taken that pain in the abdomen means either that the child has appendicitis, or else he has eaten injudiciously. The author wishes to emphasize the diversity of disease in which abdominal pain must be considered.

At least 65 per cent of all illness in children is of the respiratory tract, usually of the upper air passages.

Brenneman pointed out, and his conclusions can easily be verified, that such affections are frequently accompanied or followed by abdominal pain. This pain may occur at the onset of the infection and be so severe that attention is directed to the abdominal condition and surgical in-

tervention may be considered; or the pain appears some time after acute nasopharyngitis or tonsillitis, and again appendicitis acute or chronic is suggested.

The character of pain in upper respiratory disease is dull, spasmodic, referred to the region of the navel, and is not accompanied by hyperalgesia of the skin. Muscular rigidity is absent. There is, however, deep tenderness in many cases. This latter sign is probably explained by enlarged and inflamed glands—mesenteric or retroperitoneal.

Prolonged history of abdominal pain is often elicited in these children.

The question of appendicitis arises not only in the mind of the physician but also in the mind of the parents. If operation is performed, a normal appendix and enlarged glands are found. The syndrome of frequent respiratory infections and abdominal pain should make one hesitate to advise operation.

CASE 1. P. F., age 10, who was taken ill December 9, 1932, with stuffy nose, temperature of 99° F., had acute nasopharyngitis. He complained of dull pain in the abdomen. The pain was not associated with digestive disturbances or constipation. No tenderness or other untoward sign was noted, but what seemed to be glands were palpable in both lower quadrants. The pain disappeared after two days. Such pain frequently occurs in respiratory infections.

CASE 2. H. M., age 8, was admitted to Bellevue Hospital on November 20, 1932, with vomiting and abdominal pain which had begun suddenly at 2 A.M. on the day of admission. She looked ill, the abdomen was distended, but there was no definite area of tenderness. Rigidity was doubtful. She had an acute tonsillitis and x-ray showed probable sinusitis. Operation for appendicitis was considered but deferred until morning, when the abdominal symptoms had disappeared. In spite of the acute infection, she had no elevation of temperature above 100° F. and yet the leukocyte count was 18,200 to 23,300; polys. 73 to 87 per cent. Next day the leukocyte count was 10,400; polys. 65 per cent. Her convalescence was uneventful.

A review of over 100 cases of lobar pneumonia in older children in the children's medical service at Bellevue Hospital during the year 1931, failed to reveal a case in which abdominal pain was so prominent as to make the consideration of an acute surgical disease of the abdomen



a feature in the diagnosis In 1932, however, there were 2 cases in which the diagnosis was in doubt

CASE 3 J H, age 6, was admitted to Bellevue Hospital on August 22, 1932, for vomiting and pain in the abdomen The temperature was 103° F There was marked tenderness in R L Q and rectal tenderness The leukocyte count was 21,000, polys 88 per cent A tentative diagnosis of ruptured appendix was made, but x ray showed pneumonia The temperature came down to normal in 2 days and the abdominal signs disappeared

Hospitalization with fluoroscopic and x-ray examination, with frequent leukocyte counts and urinalyses is an advantage, of course, yet even with constant observation, early in the disease, the diagnosis may be very difficult The higher and sustained temperature in pneumonia, higher leukocyte count, the grunting respiration, the cough and other respiratory symptoms, point toward pneumonia The more obstinate constipation, vomiting, the sharp localized pain, deep tenderness, and muscular rigidity speak for acute appendicitis

It must be remembered that fluoroscopic and x-ray examinations often do not confirm our suspicions of pneumonia during the early days

CASE 4 C S, age 9, was first seen on January 15, 1930 He complained of pain in R L Q past year at times—no relation to eating, bowels regular—was slightly tender opposite umbilicus on right side There was generalized swelling of superficial lymph nodes Hodgkins disease was ruled out [It should be remembered that in Hodgkins disease the superficial glands are enlarged but not matted or caseated, as in tuberculosis The retroperitoneal and mediastinal glands are affected with greater severity than the superficial nodes] Finally it was thought advisable to remove the appendix There were found enlarged retroperitoneal glands near the appendix which was long, but otherwise normal This boy was very prone to colds, otitis and sinusitis and was rarely free from enlarged superficial glands

Surgeons, the author believes, are agreed that many children present just such a picture as this last boy, where the operation for supposed chronic appendicitis reveals no pathological condition except enlarged glands in that region

These four children illustrate the syndrome of acute respiratory infections with striking abdominal symptoms

Pneumococcus peritonitis occurs without respiratory tract infection The infection may invade the peritoneum directly through the vagina in young girls

In a second group, we find definite pathological involvement of abdominal organs Pain is again a symptom, but not always conclusive in making the diagnosis This may be due to the child's inability to express his suffering in words Respiratory symptoms may mask the picture

CASE 5 D H, age 2 admitted to Bellevue Hospital October 17 1932 This boy had been ill two days with vomiting was constipated, and an enema was given but was not effectual The child was content to lie quietly in bed His breathing then became rapid and his fever rose Hospitalization was advised by his physician On admission he looked very sick His face was drawn and anxious as though he were in pain, although he did not complain Grunting expiration was noted He had a congested throat The abdomen was distended, tympanic, and generally tender His temperature was 105° F respiration 60, and pulse 160 The leukocyte count was 7000 with polys 65 per cent While the chest signs were vague, a tentative diagnosis of pneumonia was made, and the surgical opinion was that the child did not have an operative condition of the abdomen Next day his temperature was 101° F No definite signs of pneumonia was made out and the fluoroscopic and x ray examinations were negative The abdomen was still distended and there was definite rigidity of the right rectus muscle and deep tenderness The leukocyte count was 7200 with polys 83 per cent Under primary anesthesia the rigidity persisted and a mass was felt in R L Q Operation was insisted upon in this case and a ruptured gangrenous appendix with beginning peritonitis was found The child had a rather stormy convalescence, developing otitis media on the fourth day This complication of course followed his acute nasopharyngitis, and it is interesting to speculate on the connection between this infection and his appendicitis

In young children, especially when there is doubt about abdominal rigidity or a mass being present, a few whiffs of chloroform will cause sufficient relaxation to enable the examiner to settle the question Valuable time may be saved if this is done early

In this boy the diagnosis was obscured by the throat infection, and the probability was with such a history that he had pneumonia The low leukocyte count was unusual, but was more against pneumonia than appendicitis

Congenital anomalies of the gastro-intestinal canal, either of structure or position, often cause abdominal pain in children about 6 or 7 years of age Bands or other abnormalities are not infrequently found that interfere with peristalsis under certain conditions

CASE 6 C B, age 6 (April 14 1926), was born 6 weeks premature, weighing 4 lb 8 oz, a

difficult feeding case, with low fat tolerance. During his third and fourth years he had recurrent vomiting attacks one to two months apart, accompanied by fever and foul stools. His appetite was always poor. For the past year he had had attacks of pain in the epigastrium, often during breakfast, sometimes after meals, lasting 2 to 3 minutes, occasionally longer. Pain seemed severe, but as a rule the child did not cry out. The attacks at first were infrequent, but latterly coming more often. Excitement or other emotion seemed to produce the pain at times, but the particular kind of food eaten was not thought to be a factor. He seldom was nauseated and rarely vomited. X-ray showed fish-hook type of stomach and irregular outline of the duodenum which was held distinctly high. Operation on June 7, 1926, by the late Dr. George D. Stewart, revealed a peritoneal band extending from gall-bladder to the transverse mesocolon across the duodenum. This band probably caused pressure and obstruction at times with consequent pain. The membrane was removed and gastrojejunostomy performed. The boy gained 2 lb. in 9 days, and since then while not wholly free from digestive disturbances, he has had little trouble.

CASE 7. H. P., age 7 (January 27, 1933). This boy thrived rather poorly as an infant. In spite of being a hearty eater, he has always been thin, rather pale, and has had a tendency to constipation. For the past year or more he has had attacks of "stomach ache" especially if overtired. This pain would occur every 2 to 8 weeks, last a few minutes, and sometimes he would vomit his lunch. The pain was then relieved, and he would go to sleep. The pain may have been caused by dietary indiscretion on occasion, though he had a sensible diet at home.

December 16, 1932, he had acute nasopharyngitis with a temperature of 103° F. This was accompanied by rather severe, dull, abdominal pain about navel, and distention, but no tenderness or other localizing signs. An enema relieved the pain, and there has been no recurrence to date. On January 31, 1933, x-ray of gastrointestinal tract showed: (a) dilated duodenum, (b) stasis of ileum, (c) incompetent ileocecal valve and incomplete retation of descending colon, and (e) appendix not visible.

Exploratory operation was considered, but deferred in the hope that the boy would improve under medical treatment. He was given a careful general diet with extra meals, cod-liver oil and iron, and rest before eating. On this he gained 4 lb. 6 oz. in 7 weeks and has been free from pain. One may assume that the pain was due to overdistension of the duodenum.

These two children represent a group who have periodic attacks of pain. While they are not really sick, they cannot be considered entirely well and happy. They are usually undernourished, often in spite of a good appetite and without other evidences of indigestion. Constipation is the rule. Sleep is apt to be light and restless. The pain is dull, referred to umbilicus, coming on during or shortly after eating. It is often relieved by a bowel movement.

There is rarely nausea or vomiting. Tenderness is usually absent. Rigidity is not found though distention may be noted. The diagnosis can only be made by a careful x-ray study of the gastro-intestinal tract.

A third group of children should be considered, with abdominal pain characterized by allergic manifestations. Allergic conditions such as are seen in simple purpura not infrequently cause difficulties in diagnosis. A history of urticaria, erythema or purpuric eruptions should always put us on guard. Headaches also are often due to an allergic state.

CASE 8. V. K., age 8, admitted to Bellevue Hospital December 9, 1932. This child had epigastric pain sometimes shooting to R. L. Q. for the past four weeks. A diagnosis of chronic appendicitis was made, and she was operated upon December 12. A somewhat tortuous appendix, kinked in its midportion, was removed. There were several large mesenteric lymph nodes near the cecum. On December 16 a purpuric rash appeared over the left shoulder with abdominal pain. There was gross blood in urine and she vomited fresh blood. The child had Henoch's purpura which probably had begun with the onset of pain four weeks before and was responsible for her pain. Her mother subsequently recalled that she had had an attack of urticaria 3 years before.

Abdominal pain very commonly occurs in allergic conditions. Henoch's purpura has other allergic manifestations, urticaria and erythema, which usually are precursors of the purpuric eruption.

Allergy not associated with purpura sometimes causes abdominal pain which simulates appendicitis. In these cases the patient is hypersensitive to a certain food and always has pain after eating it. The skin tests are not reliable in determining the etiology.

Jaundice may be associated with abdominal pain which is hard to evaluate.

CASE 9. M. B., age 10, admitted to Bellevue Hospital October 14, 1932. Chief complaints: abdominal pain and jaundice. This girl has had repeated attacks of pain and slight jaundice. She had a large spleen and slight increase in reticulocytes. This was believed to be hemolytic jaundice with abdominal pain.

One needs every aid available to arrive at a satisfactory diagnosis, in certain cases. The following case was not diagnosed even after careful study.

CASE 10. V. P., age 12, admitted to Bellevue Hospital November 19, 1932. Pain in right and left flank of 2 months' duration. This girl was

a Greek who spoke English imperfectly, but enough to confirm the history. A careful and thorough study failed to establish the cause of her pain. She was free from pain while in bed in the hospital. Report March 15, 1933, doing well.

This girl was sent into the hospital for observation for chronic appendicitis. Her temperature and blood count were normal. She had no localizing signs in the abdomen. A gastrointestinal x ray series showed no abnormalities of stomach or bowels. Some urinary affection was suggested possibly stone. No evidence of stone was shown in x ray, and a complete study of the urinary tract—cystoscopy, ureteral catheterization, pyelogram—all were negative. The urine was normal. Examination for possible abnormalities of uterus or ovaries was negative.

One might resort to hysteria or a neurotic condition as the answer, but it would be far from a satisfactory explanation. Sensitive or high strung children especially, but any child at times, will complain of pain in the abdomen after eating when under some emotional stress. But this girl was phlegmatic and showed no signs of hysteria or nervousness.

The rôle of urinary disorders in relation to abdominal pain is varied. An over-distended bladder causes pain in that region and should not be overlooked. Again, a negative urine does not exclude urinary tract affections which may cause pain.

CASE 11 D R, age 9, was admitted to Bellevue Hospital during November, 1932. Her history developed the fact that for 2 years she had suffered attacks of pain in L U Q (left flank). She had been seen in O P D on account of this pain.

X ray showed no evidence of urinary calculus. Occult spine bifida was noted which, of course could not account for the pain. The urine was negative. Further study of her urinary tract by Dr. Meredith Campbell showed definite irregularity of the kidney pelvis by skiadol shadow. There was no evidence of obstruction in the ureter. The shadow of one calyx was enlarged. Dr. Campbell believes that this may be due to pressure outside the pelvis perhaps from perinephrosis. (The kidney lesion is probably responsible for her pain.)

While pyelitis is not always accompanied by any symptoms referable to the urinary tract, at the onset pain in the ureter region may be so prominent that if on the right side, we must consider the possibility of appendicitis. Finding pus in the urine establishes the diagnosis.

Repeated attacks of abdominal pain are caused by chronic intussusception. The sausage shaped mass appears only with the attack and in the interval no evidence of it is found. Another more rare condition should be mentioned mesenteric cyst. Here a round, easily movable tumor is felt.

To attempt to catalogue all possible conditions that cause abdominal pain would

be tedious and serve no useful purpose. The cases cited will illustrate the difficulties in diagnosis and indicate the variety of affections not all abdominal, in which pain is prominent.

#### THE MECHANICS OF ABDOMINAL PAIN

The abdominal viscera are relatively insensitive to pain from cutting. The liver, spleen, and kidneys are not painful when diseased unless the capsule is rapidly distended. Even a gastric ulcer is insensitive on palpation, but pressure on it through the abdominal wall causes pain. Pain results when hollow viscera are distended suddenly, especially the smaller structures, ureter, bile ducts. Chronic distention of the intestines, as in celiac disease, Hirschsprung's disease is not painful. Constipation rarely causes pain. Pain arises from sudden distension of the bowel. So called gas pains are not caused by paralysis of the bowel but by inhibition of peristalsis which allows gas to accumulate and stretch the intestinal wall. Peritoneal adhesions of the gut or bands do not cause pain unless they produce a partial or complete obstruction. Hernias of the bowel are not painful unless there is definite constriction.

The abdominal viscera are supplied by the vagus nerves which when stimulated increase secretions of digestive juices and cause contraction of the bowel wall—peristalsis. The vagus also causes contraction of throat muscles, wherefore hoarseness occurs with intestinal colic. Excessive stimulation of the sensory vagus produces facial neuralgia and altered sensitivity of the upper portions of the alimentary mucosa. Stimulation of the vagus also slows the heart and relaxes the sphincters of bladder and bowel.

The vagus then has a wide range of function and distribution.

Antagonistic action is found in the sympathetic which when stimulated decreases the intestinal secretions and muscular activity.

It is an everyday observation that these subdivisions of the involuntary nervous system are affected greatly by the emotions. Anger, fear, excitement, all interfere with digestion, with normal peristalsis and so result in constipation or diarrhea.

The mesentery and mesocolon are painful when pulled or stretched, but the posterior parietal and visceral peritoneum is in the silent area. The anterior parietal peritoneum is extremely sensitive.

The anterior parietal peritoneum is supplied by the same cerebrospinal nerves as the skin and muscles of the adjoining abdominal wall. Morley, in his book "Abdominal Pain" (1931), states that visceral pain is deep-seated, dull, spasmodic, imperfectly localized—the splanchnic type—while pain due to stimulation of the afferent somatic nerve, *e.g.*, on the anterior parietal peritoneum is sharp, continuous, and accurately localized.

Conscious pain is perceived in the thalamus as a general discomfort but not actually localized unless a definite tract

the pathway for pain arising in a diseased abdominal organ, and thus we have definite localization of pain, deep tenderness, muscular rigidity, hyperalgesia of the skin, all characteristics of somatic pain.

Livingston, in his book "The Abdominal Cavity and Peritoneum," published in 1932, on the other hand, upholds the contention that the pain mechanism is a viscerogenic reflex which closely associates the abdominal viscera with specific parts of the belly wall. This reflex takes place through the intimate relation between the cerebrospinal and involuntary nerve fibers

ABDOMINAL RECORD									
Name	Age	Color	Sex	Date of examination		Clinic No.			
1. <i>Family history:</i> Father		Mother		Brothers		Sisters			
Constipation		Food idiosyncrasy		Age		Age			
Indigestion		Abdominal operations							
2. <i>Habits:</i> Appetite				Diet — Breakfast					
Bowels — Time		Character		Lunch					
Sleep — Hours		Character		Dinner					
Exercise				Sweets					
				Menstruation					
3. <i>Abdominal pain:</i> Location				Relation to meals					
Character				Relation to defecation					
Radiation				Relation to exercise					
Duration				Relation to menses					
Course of attack				Relation to infections					
Frequency				Relation to emotional disturbances					
Periodicity									
4. <i>General:</i> Urinary history — Urgency				Respiratory infections		Last			
Frequency				Adenitis		Respirations			
Nausea		Allergic symptoms		Temperature		Pulse			
Vomiting									
5. <i>Examination of abdomen:</i> Contour				Distention		Muscle tone			
Visible peristalsis				Areas of hyperalgesia					
Distended veins				Tenderness		Location		Rigidity	
				Direct					
				Rebound		Degree		Psoas spasm	
				Rectal				Bimanual comparison	
Mass: Site		Fecal				Liver			
Character		Glands				Spleen			
Size		Neoplasms				Jaundice			
6. <i>Laboratory findings:</i>									
Urinalysis									
Stool examination									
Blood examination		RBC		WBC		HB, Diff.			
X-ray findings									
7. <i>Diagnosis:</i> Treatment				Operative					
Progress notes				Medical					
Date	Weight	Appetite	Digestion	Bowels	Sleep	Pain	Remarks	Treatment	

mechanics of abdominal pain are not solved, study of these explanations may aid us in understanding why pain occurs under certain conditions. If we recall that the vagus supplies the throat and the alimentary tract as well, abdominal pain occurring in the course of upper respiratory infections may be better understood. Fortunately many children presenting this symptom are not surgical problems. Yet pain in the abdomen should always demand a painstaking history and careful examination of the patient. Many mistakes are due to lack of care and thoroughness. It has been said that the difference between the general practitioner and the surgical consultant is that the surgeon makes a rectal examination.

In taking the history of a patient with the symptom of abdominal pain, the character, severity, and location should be noted. The relation of pain to eating, bowel movement, allergic conditions, and respiratory infections should be studied. The daily habits of the child, his diet, his emotional life need investigation.

Other members of the family may have tendencies to digestive disturbances, *e.g.*, food idiosyncracies that have a bearing on the case.

A method of physical examination that is thorough should be kept in mind. The technic of examination is important. Time is well spent in gaining the confidence of the child. The examiner's hands should be warm, for spasm of the muscles is the certain reaction to placing a cold hand on the abdomen. Both hands should be used

in palpating the abdomen, for comparison. With an older child it is wise to have him point with his finger to the site of pain, then tell him to press down and find the place that hurts. By pressing down over the child's own hand voluntary spasm may be avoided. Always begin the examination away from the area of suspected tenderness.

The examination should be deliberate, unhurried and systematic. For that reason it is well to have a written outline which will serve to keep one on the track. The synopsis shown in the Abdominal Record Chart is an attempt to cover these features.

Abdominal pain in children should always put us on guard. When confronted with this symptom a possible surgical condition should not be overlooked. But every means should be used to establish the diagnosis before resorting to operation.

In considering the acute abdomen, appendicitis is the most common affection. Intestinal obstruction, including intussusception in infants, is next in importance. From the surgical standpoint the diagnostic problem is largely one of eliminating these conditions.

#### SUMMARY

(1) Cases illustrating various types of abdominal pain in children are related and briefly discussed.

(2) Known facts and theories of the pain mechanism are reviewed.

(3) An outline is presented for the study of abdominal pain.

112 EAST 73RD ST

#### A HEALTH TRAIN

The last word from Paris' sometimes tells of new styles in medicine as well as in hats and frocks. An item from the Paris correspondent of the *Journal of the A.M.A.* says that the Nord railway has put into service a special sanitary train to be used on its lines to facilitate radiologic examination of those of its agents who are employed in small localities, distant from hospital centers. The train is composed of three special cars, one to serve for consultations and for roentgenologic examinations, a second car for the accommodation of the physician, and the corps of assistants, and a third car that serves as a waiting room. This sanitary train which functions with great success, has as its chief

objective the application of prophylactic measures against tuberculosis but it serves, at the same time, as an evacuation center and directs to suitable institutions all patients, tuberculous or otherwise, who seek a consultation. Soon after this sanitary train was put into service a train of a similar type, but even more luxuriously equipped, was constructed by the government-controlled railways. It is designed to travel over all the lines of the government railways and to visit more particularly the remote small localities in which medical organization is inadequate, to assist in giving clinical and roentgenologic examinations to the employees of the company.

## BIOPSY AS AN AID TO DIAGNOSIS

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*New York, N. Y.*

In no other organ of the body occur so large a number of different diseases as in the skin. Clinicians have counted, and named, more than two hundred and fifty distinct forms of skin disorders.

In as much as all these pathological conditions are dependent upon changes in a relatively few types of elementary tissues, it is obvious that a great number of different clinical forms show anatomical changes which appear strikingly alike. Frequently, only after a careful study of the relative disturbances in different classes of cells and after a careful scrutiny of the finer cell structures by means of special and differential stains are we able to point out differences in the histopathology of these diseases.

It is true, nevertheless, that in many skin diseases we can make a diagnosis almost at a glance from a single section. This is true above all in the class of tumors of the skin. Neoplasms of epithelial origin, blood, and lymph vessels, etc., commonly present a picture that is unmistakable. Thus also many of the chronic inflammatory diseases can often be recognized with certainty. However, this cannot be said of most of the acute inflammations and infectious processes.

This brings me at once to one of the main purposes of this address. The pathologist is often asked to make a diagnosis of a clinical condition from the picture presented in a section of the skin. In a great number of instances it is not possible to answer the question, "What is this?" The pathologist may be able to say that the section discloses a process of a superficial, probably infectious, origin; or that the changes indicate a chronic infection of hematogenous origin; that the case is one of a lymphoblastoma, etc. But very few diseases have so characteristic a pathology as, for instance, lichen planus, herpes zoster, or Paget's disease, that a clear cut diagnosis is possible with the inadequate material placed before us. Very often it is a matter of pure chance whether or not a given section discloses the characteristic changes.

The intensive study of the histopathology of the skin during the past forty years has

enabled us to point out features peculiar to many skin diseases; and many of these are pathognomonic. In a case seen recently clinicians were unable to decide between leprosy and syphilis. A brief inspection of a single badly prepared section enabled me to say positively that the case was not one of leprosy. It would require a volume to describe all the characteristic changes found in the various diseases. The purpose of this paper, however, is to indicate how the histologist can help the clinician to arrive at a diagnosis. Too often the clinician sends a slide to the pathologist and expects him to make a clinical diagnosis from it. This is a wholly erroneous view to take of the function of the pathologist. The clinician should not send a picture puzzle to the pathologist with the expectation that the latter will put it together to make a clinical diagnosis. Very often the pathologist is able to solve the puzzle; but often he can determine only the general group to which the picture belongs. On the other hand, by observing certain rules, he can practically always help the clinician to come to a diagnostic conclusion, even if he cannot alone make the diagnosis for the clinician. The clinician is asking for help; he should, in turn, give all the help he can to the pathologist. In short, he should act as he would in a consultation with a colleague. He should describe the lesion, note its location, the age of the patient, and the duration of the affection; he should, furthermore, set forth a differential diagnostic picture of the clinical lesions as he sees them. The question then becomes greatly simplified for the pathologist and he may safely be counted on to give the required help, provided adequate material is furnished.

Secondly, it is the common practice of the clinician to submit the specimen he has excised to the hospital pathologist. Now, it is the simple truth of which every dermatopathologist has had repeated confirmation—and the general pathologist will not dispute it—that the general pathologist is not familiar with skin pathology. Moreover, the laboratory technician seldom knows how to cut skin sections. It matters very little whether a piece of liver or of

kidney is cut in one direction or another; an interstitial nephritis or a cirrhosis of the liver can be diagnosed from a section of these organs cut in any direction. But it is quite different in the skin. I have seen sections, stained with the universal hemotoxylin eosin, cut at a surface angle of 45 degrees or more; a diagnosis from such a section is little more than a guess.

To come to a conclusion, it may be necessary to examine many sections, possibly in series, and to employ many specific stains to bring out special features of the tissues, to determine the presence of lipid elements, lime salts, glycogen, etc. The clinician may be justified in placing the responsibility of arriving at a conclusion wholly on the pathologist; but he should not handicap him at the start by making it impossible for him to study the case with every aid that progress in his field enables him to employ. He should send the entire piece of skin he has excised, not simply a section, to the pathologist. The specimen should not be allowed to lie around on the operating table for half an hour before it is placed in the fixing fluid. It should be put at once in a 10 per cent solution of formalin and forthwith sent to the pathologist. There are better fixing agents than formalin, but none is so generally useful and none will interfere less with the staining reactions.

A matter of prime importance is to

select the portion of the lesion to be examined. An ulcerating lesion, for instance, will show granulation tissue and very likely will give no clue to the real nature of the lesion. Many a malignant growth has failed of recognition because the specimen was taken from an ulcer. Whenever it is possible, the specimen for biopsy should be cut from an early stage of the lesion and it is always well to have the excised piece of tissue large enough to include at least a border of normal skin. In cutting out the specimen, the operator should be careful not to pinch, squeeze, stretch, or otherwise maul the tissues. He should *not* use a cutaneous punch. Specimens removed with a punch are always difficult to handle; they are usually oblique and bruised. Moreover, the cylindrical wound made by the punch always leaves a disfiguring scar.

In concluding this very elementary discourse which I have prepared at the request of your chairman, I wish to emphasize the fact that a diagnosis based on a histological examination has a high degree of value and that it often is the decisive factor in differential diagnosis; that a diagnosis based on a single slide is often impossible, and that the entire specimen should be placed at the disposal of the pathologist, together with the report of the clinical diagnosis.

955 PARK AVE.

#### A NEAT RETORT

A delicious reply to a critic of the medical profession was made by Dr. Dean Lewis of Baltimore, President of the American Medical Association, at a meeting on medical education in Chicago a few weeks ago. The critic was a nonmedical man, Justin Miller, Dean of the Duke University School of Law. Dean Miller castigated the physicians for their "strange resistance to the experimental work of psychology and a stupid unwillingness to develop the field of psychiatry." And as if that were not enough, he added: "If it be true, as has been stated to me, that from 40 to 60 per cent of all operations for appendicitis are unnecessary and that a considerable portion could be avoided by proper psychiatric diagnosis, then the public has only a little more to fear from fakirs than from physicians."

A little later Dr. Lewis was slated to speak,

and when he rose he remarked that he was interested to hear Dean Miller's discovery that half the appendicitis operations performed were unnecessary. "I'm wondering," he added, "whether he was told that by the chief psychiatrist in one of these institutions for mental cases he speaks of, or one of the inmates."

Now our bright writers and speakers are amusing themselves with the initials NRA. In an address before the Wayne County Medical Society at Detroit, M. W. Bingay, of the *Detroit Free Press*, said: "Under the oath of Hippocrates you (the medical profession) have always had an NRA code, the NRA standing for 'Never Refuse Aid.' I fear, however, in these trying times, that many of your patients have a code of their own and for them the letters NRA stand for 'Never Reward Æsculapius.'

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## EDITORIALS

### An "Ample" Life for the Doctor

As we look over the ranks of the successful medical practitioners, we see two types standing out sharply and distinctly. One has no time for anything but his work. He "eats, drinks, and sleeps it," as we say. Art, music, politics, finance, have little interest for him; his mind is busy on some fascinating medical problem. This type of doctor is often held up for our admiration. When we meet him, we are at once overcome by an inferiority complex because our poor minds occasionally turn to a good play, a corking mystery story, a round of golf, or the crack of a bat that lines one into the bleachers.

The other type may be equally skilled, equally sure-fingered in the operating room, and equally uncanny in that magic second sight that seems to penetrate flesh and bone and find the mysterious spot of infection that is causing the mischief. Yet an hour later he is one of a happy group of lawyers, bankers, architects, or just plain business men, an ordinary human being, "grasping life as a whole" and seeing it "in the round," as the poets say it.

Both types are admirable. It is not in the province of any critic to cast a stone at either. The first type, intense, devoted, could never join in a stein song around a

table of jolly good fellows; the second type, if made to think of nothing but work all the time, would simply perish.

But many a doctor lives in a sort of middle ground. He has a feeling that he ought to give himself wholly to his work. If he takes a few hours for golf, baseball, bridge, or a dinner party, he feels guilty, and wonders "what people will think." This subject was discussed with much wisdom and good sense not long ago by Dr. Henry S. Houghton, Associate Dean of the Division of Biological Sciences of the University of Chicago and Director of the University Clinics, in an address before a western medical society. In his work with medical students he confesses he is often drawn to the one with "a budding passion to be on the debating team, or editor of the school paper, or to toot a wicked saxophone," for "there is a chance that we can help such a person to become not only a good doctor, but an interesting man, a fruitful contribution to his own society, and an effective citizen of the world." A one-sidedness that can see nothing but science "must be corrected if a balanced view of life is to be achieved."

For the doctor is more than a doctor, and the patient is more than a patient. The doctor who knows only his science is missing something essential, something vital. One of the greatest of modern mechanistic philosophers is quoted as saying that the pursuit of science as a sole end "is incompatible with the pursuit of truth, with love, with art, with spontaneous delight, with every ideal that men have hitherto cherished." The doctor is dealing with human beings and he must be human too if he is to understand them. "If he is to serve people fully, he must not only have affection for them, but he must know them," says Dean Houghton, and "the mastery of the world of feeling and emotion is to him as great a concern as the mastery of skill." The art of healing is only one part of the greater art of living, and the doctor must know the greater if he is to understand the lesser.

Voltaire goes even further. The physician, he says, "requires a grasp of all the dexterity and intricacies of all other professional classes," for "equipped in this



way, he is able to be a benefactor to the whole of society." That is a rather large order, and it might well dismay any medical aspirant, but the doctor who can be a human being too, who can understand his patient's joy, sorrow, tragedy, romance, his whole life, in fact, is just that much better fitted to bring him back into harmony with health—physical, mental, and spiritual

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### The "Cut-rate" Drug Store

The egg that is a trifle doubtful, the man whose character is just a bit shady, and the drug store that makes its loudest boast about its cut prices seem to have a great deal in common. The State Board of Pharmacy has had special investigators out looking into the quality of some of the things sold at such shops, and as a result the secretary of the Board some time ago issued a warning to people who patronize them. No store, of course, is perfect, but when 44 per cent of the products purchased by the investigators in these places turned out to be inferior, what are we to think?

Out of nineteen samples of witch hazel, eleven were defective. Witch hazel is used to allay inflammation, but five samples contained acetone, an irritant. Seven of twenty-four samples of hydrogen peroxide were deficient in oxygen and hence little better than so much water. Nine of twenty one kinds of mineral oil were ineffective as laxatives.

One of these "cut-rate" emporia in Buffalo recently advertised a "Personal Health Service," said to be directed by a graduate nurse read 'to help you with your health and hygienic problems.' The veiled meaning in the word "hygienic" needs no explanation. The *Bulletin* of the Erie County Medical Society correctly states that "an individual who holds herself out as qualified to give medical advice and is not a registered physician is guilty of a misdemeanor."

Combine with all this the new "racket" of counterfeiting and bootlegging the pharmaceutical products of well-known and reputable firms under false labels, and you have the best reasons in the world

to uphold, stand by, and recommend the druggist of proven worth, character, and integrity. No inspectors, no laws can keep up with rascality. No doctor's prescriptions are safe in such places. Druggists who play fast and loose with their customers' health will stop at nothing. Physicians may well cooperate with the public in patronizing the chemist who mixes conscience in with every preparation he puts up.

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### How Can We Cure the Oversupply of M D's?

A congestion causes trouble, whether it is an oversupply of the blood that raises a patient's temperature, or an oversupply of doctors that gives the profession a chill. In this time of depression, of course, we feel that every line is overcrowded, that we have too many lawyers, teachers, butchers, bakers, and candle-stick makers, but as a matter of fact, the cold figures show that we have one licensed physician for every 780 persons in this country, while England has one per 1,490, France has one per 1,690 and Sweden one per 2,890. We have over 156,000 doctors all told and could do with half that number and still be as well supplied as France. The sick might not receive as good care with half the present number of doctors, but the doctors would certainly make a better living, and that is the point we are discussing here. And the doctor's income concerns the patient, too, for a well-paid profession will attract a better quality of entrants than one that is paid poorly.

A cut of 50 per cent in our supply of medical men would no doubt be going too far, but some estimate that adequate medical care could be provided here by about 120,000 active physicians, making our present surplus about 35,000. No one proposes to weed out this 35,000 surplus, but the present overcrowding is blamed for fee splitting, unnecessary services, bill-padding, illegal operations, employment of runners, and compensation rackets in an address by Dr. Walter L. Biering, of Des Moines, that is published in the *A M A Bulletin*. He quotes Dean Rogers, of the Colorado University School of Law, as declaring that 'an oversupply in any

branch of learning usually results in the development of price-cutting, irregular trade practices, and a fringe of casualties, losses, and waste." Public and individual both suffer "from the existence of misfits, failures, wasted energies, and frustrated efforts."

True, we might argue that the public will itself take care of the matter by patronizing the best and leaving the incompetent to find a living elsewhere, but we know that it unfortunately does not work out that way. The public does not always exhibit the high grade of intelligence credited to it in the textbooks, and often shows a tendency instead to flock to chiropractors, faddists, cultists, and doctors, good or poor, who are natural-born salesmen.

How, then, shall we reduce the congestion? The province of Alberta, Canada, is trying to do it by a law providing that no more physicians shall be registered there until the proportion has reached the level of one to 1,200 population. But that remedy dams the tide of new knowledge flowing in from the medical schools and tends, at least, toward medical stagnation. Sweden has what Dr. Bierring calls an ideal arrangement. They calculate just how many physicians are needed, and permit only the required number to enter the medical schools. Not only that, but it seems that the government takes care of the graduates for the first two or three years in practice, locating them in outlying districts where they prepare for such posts as they may choose for themselves later. No doctors from outside Sweden are permitted to practice there, so the number is always under complete control.

It would be quite doubtful if such an autocratic plan could be put into operation here, but many feel that our medical schools ought at least to hold the reins tighter, and release fewer medical graduates upon an already overcrowded profession. Some suggest that the schools deliberately plan to "flunk" a quarter or a third of each freshman class, and then continue the weeding process during the rest of the course, and graduate a select number of the very highest quality. Trade unions have long limited the number of apprentices, or students, in order to keep

numbers down and wages up, and it is felt that the medical profession may have to do something similar.

But it need hardly be said that the survival of the fittest in the weeding-out process should not be based on the ability to pass an examination. A real physician is something more than an intellectual machine. His work calls for the finest qualities given to man, and any selective process should test the whole man, and not merely the faculties that bring a high mark in university work. This consideration, too, should reach back into the selection of the men who are to enter the medical schools. Knowledge they should have, but also intelligence, which is something more, as the greater includes the less. Natural skill and aptitude should be there, to put the knowledge to its perfect use. Personality, a great gift in any walk of life, is needed by the physician, and, above all and ruling all, character, which makes all the other gifts a blessing or a curse, according as to whether it is present or absent, like the boy's definition of salt: "It's what makes your food taste bad when there isn't any."

Another remedy, and the one best for the public, is to win the millions to scientific medical treatment who now flock to the "isms" and the cults or deluge their unhappy systems with oceans of patent medicines. The radio, the newspaper, the public school physicians, are winning these wayward ones more and more to the right path, and it may be no exaggeration to say that every doctor in practice to-day would be needed for a proper care of the nation's health. Education, then, spreading the gospel of scientific medicine, may be the key to the problem.

### Where is the "Old Family Doctor?"

This celebrated and beloved character seems to be missing. He is almost obsolete, remarked Dr. Howard W. Haggard in a recent address. Wistful myths are growing up about his memory. He was a power in the town, a paragon in medical matters, an oracle, a father confessor. Babies were named after him, and his limitations "were known only to his wife and the town druggist." We may smile

at him if we like, but Dr. Haggard reminds us that at any rate his patients did not turn from him to the quacks, the cults, the faddists. They respected him. No one suggested that the old family doctors group together into a subsidized, socialized sort of practice to become servants rather than leaders of the community. They would have regarded the slightest hint of it as an insult.

Now medicine has advanced amazingly and the doctor does far more for his patients than in the old days, yet the prestige of the physician and the public regard for medicine "have not increased correspondingly," he remarks, "indeed, they seem to have declined." The reason for it, Dr. Haggard finds in the fact that the doctor has become a mere scientist, and "to the American public the scientist is not a god, but only a servant." This loss of prestige, of public regard, is an obstacle to the advancement of medicine, he holds, and the problem now is to regain them. The physician must leave his office sometime and become a factor in public affairs. "The public will appreciate the importance of medicine when it sees the physician entering into the activities of the community and becoming a leader there."

However, it appears that some of the old family doctors are still left, and one of them out in Kansas writes a letter to his son telling about the good old days. We find it in the *Journal of the Kansas Medical Society*. He compares the wonderful new surgical instruments with the ones of his time and remarks wisely that dexterous fingers and a modicum of brains are still needed. He recalls improvisations that were necessary on the spur of the moment. "We learned to make bandages with starch instead of plaster of paris and to saw off a bone in an emergency with a carpenter's saw." Once he sent a man on horseback four miles over the prairie to borrow a long tube from a baby's bottle to "catheterize a poor old nester whose functions were out of commission." It was rapidly used and swiftly returned in time for baby's next feeding! There were no telephones or automobiles, and the buggy stove burning carbon blocks was thought the last word in comfort in zero weather.

To-day the doctor in his heated sedan goes 50 miles per hour "and is back from his country call and on his second rubber of bridge before the old doctor would have been fifteen miles on his way." But to-day's doctor "has never had fifteen or twenty tow-headed potential candidates for President named after him," he has missed being the trusted adviser in time of family trouble, and "has missed the affection and loyalty that was the heritage of the old doctor."

This subject simply will not down. Dr. Dean Lewis of Baltimore, President of the American Medical Association, read a paper a few weeks ago at a medical congress in Chicago on "The Restoration of the General Practitioner," and, as some times happens, the discussion following the paper brought out some of the most stimulating ideas. In the discussion Dr. James B. Herriek, of Chicago, said that the general practitioner of the old type "had to pass" and "cannot be put back," because "the mass of medical knowledge that came on the world a few decades ago was so huge that it made it impossible for any one mind to grasp it all, or to practice in accordance with that knowledge." For that reason, "the day of the know-all and do-all doctor has passed."

But a new type of family doctor is developing, Dr. Herriek assures us, a type that will succeed, if he is qualified. He must possess knowledge that is gained not only in his years of schooling, but "by studying long and hard through the years of practice." And that, too, is not all. He must also have character, energy, and personality.

The kernel of it, then, seems to be that if we lose the Old Family Doctor, we may gain in his place the New Family Doctor, perhaps less picturesque, but far better for the family, which after all is the main point.

### The Physician's Part in Politics

All lawmaking bodies and all lawmakers are undergoing a critical scrutiny just now, all over the world. Perhaps it is deserved. In Europe the distrust has reached the point where some of the governments have

been handed over to dictators. In other lands, as in France, for instance, public mutterings against the lawmakers are both loud and deep. In America our attitude has not reached any such stage as that, but it must be said that the work of our Congress and our legislatures often leaves something to be desired, especially in legislation affecting the public health. And when our lawmaking bodies come to deal with health insurance and socialized medicine, perhaps in the near future, then the interest of the medical profession will become very active and vital.

Can we say in the face of this situation that the doctor has no concern about the sort of man who shall go to Albany and Washington? True, the doctor cannot go on the stump for or against any candidate or party, but it is entirely proper for him to keep in mind the attitude of any candidate on matter affecting the public health, and to exercise his right as a free citizen to express his honest opinion at any and all times.

What brings this matter up just now is the case of a legislator in Indiana who gave his work during his campaign that he would never vote against the interests of the medical profession. Like many other politicians, he forgot his promises as soon as he was elected, and voted against the measures advocated by the profession on every occasion. Two years later he was again a candidate, and the medical society in his district made his perfidy public. He thought he was secure in his political position and told the doctors they could do their worst and go some place else! And, says the *Journal of the Indiana Medical Association* "We did go to it; we 'ganged' on this chap, with the result that primary day, for him, was a veritable Waterloo."

Now the primaries in Indiana are on again, and the legislative committees of the state and county medical societies have given their members full information about attitude of their lawmakers on measures affecting the public health, and the doctors are being urged to give this information to all their patients and friends. The issue of campaign is above politics. It is the interest of the people's health that if it gives the doctors a little

practice for the big battle against the socialization of medicine later on, then so much the better.

### To "Make Motherhood Safe for Mothers"

The strong and determined attack that is being made on maternal mortality means that the death rate must soon give way and recede to lower levels. Mothers' Day this year, on May 13, was marked by the stirring slogan, "Make Motherhood Safe for Mothers," and medical societies, women's clubs, and welfare organizations are uniting in a tremendous effort to arouse the public to the fact that many maternity deaths are preventable, in other words, that many of the 16,000 women who die annually in childbirth could be saved.

A tragical state of affairs is revealed by an investigation made by the Children's Bureau of 7,380 deaths in 15 states from causes connected with maternity. The study in each state was made at the request of the State Medical Society and the information secured by physicians of the State Boards of Health or the Children's Bureau, from the attending physician or midwife. It was discovered that 9 per cent of the women had had no medical supervision at all, or only when dying. Only 54 per cent, it seems, had any prenatal care whatever, 24 per cent had poor care, and only 13 per cent had good care starting not later than the fifth month. More than half of the women had some operative procedure, and of these, 43 per cent were women the doctor had not seen before labor or before the acute emergency. In 11 per cent of the cases there had been a cesarean section. The death rate was higher for urban than for rural sections, being 7.5 and 5.5, respectively, per 1,000 live births.

It would appear as if community effort is needed to determine the local conditions and it is by this means that improvement will most likely result. In the report of the Committee on Public Health and Medical Education presented at this year's meeting of our State Society there is contained a recommendation as to the participation of the County Societies in this movement, which is deserving of the careful attention of the membership.

# Correspondence

*Enclosures others than a 2 by 4 inch 10 cent stamp should not be used. All communications must carry full name and address of the writer but there is no need to enclose a photograph.*

To the Editor

When the Gods wish to destroy their first made man—This old proverb is quite applicable to the two editorials entitled respectively "Deficit" and "Alice in Wonderland" which appeared in your Journal of April 15, 1934.

The hysterical outburst against the proponents of socialized medicine is indicative of the state of panic in the minds of those who compose the editorial in question as well as of the commission concerning the true position and temper of the rank and file of the medical profession. Aside from the merits of the issue at hand the sentiments expressed and the language employed detract from the dignity of the official organ of the Medical Society of the State of New York.

The doctors who are advocating socialized medicine are not the cowards the writer would have them be, on the contrary they have the courage and the clear vision to oppose those forces in organized medicine who have vested interests to protect and who apparently are willing to stoop to any method in order to maintain their entrenched position. We are advocating socialized medicine because at least 80 per cent of the doctors in this country are earning less than \$212.60 net per annum and receive an average compensation of \$100 per hour—less than the earnings of a policeman or a plumber (see William Allan Richardson, Our Post-Depression Incomes, Medical Economics April 1934). We are also championing the socialization of medicine, because we believe that it is the only way to restore medicine to a professional status, because the present system has tilted the doctors as well as the public, because true preventive medicine is only possible when the doctor's interests will be benefited and not in-

jured as they are today by the elimination of illness through widespread prophylaxis.

That socialized medicine has accomplished in this country a result is conceded by the third editorial in the issue entitled "Denmark Conquers Syphilis." It admits that this plague of mankind has been placed under control in that country. Has the editor overlooked the fact that Denmark doctors who have accomplished this truly beneficent result are operating under a modified form of socialized medicine? Why then is this system is capable of producing so much for the human race does the editor pray for a Chinaman to prevent its coming?

M. L. DRAVIS, M.D.

To the Editor

Your editorials "Deficitism" and "Alice in Wonderland" in the 15th instant deserve the highest praise and commendation of the entire medical profession.

It angers well over the new policy you have adopted and reminds the medical profession and its true friends of the danger which threatens them from the self-appointed professional reformers and revolutionaries who under the guise of benevolent medical philanthropists are trying to destroy the medical profession for selfish and old purpose.

The medical profession must at all times be on guard against the insidious influences of the self-appointed guardians of the public well, therefore the Buffalo Medical Club of Buffalo, consisting of a group of physicians of liberal extraction at their last meeting unanimously voted to commend you for your splendid editorials.

CHARLES FROST, M.D.

## THIS AND THAT

The old time country doctor who used to get his pay in potatoes, card wool, chickens, sausage and hay would find nothing to surprise him in the reports of Hospital superintendents in various parts of the country that patients are paying their bills by supplying window shades, turkeys, express service etc. Doctors and nurses are getting used to seeing former patients acting as porters, elevator operators, carpenters, seamstresses, waitresses, gardeners, painters, and what not, to square their accounts.

poverty or vice. Nor is there a lock on any door.

Ten thousand children—enough to fill all passenger accommodations in seven large liners—were carried in Canadian Pacific liners during 1933. Ranging from earliest infancy to ten years, the youthful travelers were usually accompanied by their parents, but a number traveled by themselves, sometimes on journeys of 5000 miles or more.

The island of Curvo, the most remote of the Azores has a single village of 600 souls dwelling in the bare of an extinct volcano, which is perhaps the most archaic community in the western world. And happily so, for ruled by a council of elders and with a priest as the only physician, Curvo knows no contagion, crime,

A new paper written in the New York Herald Tribune remarks crisply that "a green apple a day lays the doctor's cone."

When you want more milk in your coffee in Malta the waiter leads the goat to your table.

# Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

## Physician and Patient—Duty to Warn Patient of Dangers Incidental to Operation

Recently an interesting case came before the Appellate Courts in a nearby jurisdiction in which was presented the question as to the duty that a surgeon is under to warn a patient of the dangers incident to a contemplated operation. In order to understand the ruling it is necessary to refer briefly to the facts in the case.

A woman who was apparently a golf devotee had for some time been troubled, especially when holding a golf club, by what she described as a lump in the palm of her hand. She was referred to a surgeon for advice concerning the condition. He examined her and found that about the center of the palm there were certain lumps, with a puckering of the skin near the normal creases of the hand. There was discernible a tense band about an inch and a half long extending from about the center of the hand just below the wrist, to the fourth finger. The doctor diagnosed the case as one of Dupuytren's contracture. She complained that she could not hold a golf club the way she would like to and asked the doctor whether the tissues had become contracted from playing golf. The doctor explained that the condition was a thickening and contracture of the palmar fascia, and described to her in some detail the anatomical structure of the hand. The doctor advised an operation and told the patient that her hand would further contract if no operation was performed. She inquired as to the dangers of the operation, and he told her that the treatment would be quite simple if undertaken at the time, but would be more serious if left until later. He also told her that she would have to be in the hospital for four or five days, and explained the only recognized treatment for the condition so far as he knew was operative. He did not describe to her all the possible risks, or complications that might follow such an operation.

The patient consented to the treatment recommended and entered a hospital for

the purpose. An incision was made from about the middle of the proximal part of the palm toward the base of the fourth finger. The skin was found adherent to the underlying fascia. The skin was dissected away, retracted back, and a quantity of fascia removed. After the operation a condition developed which the doctors who testified in court later in the case were at a loss to explain. The patient's second, third, and fourth fingers became contracted. The hand became swollen and painful and x-rays showed marked atrophy of the bones of her fingers, wrist and arm. Her use of the hand was fairly described as being limited to from 25 to 50 per cent.

She thereafter brought an action against the surgeon in which she sought to receive damages for her injuries on the theory that he had failed in his duty to advise her that the operation was "serious, precarious, and dangerous," and that he had failed to acquaint her with the prospect that the operation might prove unsuccessful and cause her permanent injuries. The case came on for trial and she recovered a substantial judgment based upon the said theory of the case. Upon the trial she did not seek to prove that the defendant was in any way negligent or unskillful in his treatment of the case.

An appeal was taken from the judgment on behalf of the defendant and it was contended that he had not in any way failed in his duty to the patient. The Appellate Court in a carefully considered opinion directed a reversal of the judgment of the lower court. In the opinion the duty to the patient was summarized as follows:

"The relationship of surgeon and patient is naturally one in which trust and confidence must be placed in the surgeon. His knowledge, skill and experience are not and cannot be known to the patient, and within proper limits it would seem to require that when an operation is contemplated or proposed a reasonable clear explanation of it and of the natural and expected outcome should be vouchsafed.

"It must be borne in mind, however, that when a surgeon is asked his opinion of the patient's

condition, and for his advice as to whether an operation is necessary, he is not infallibly in a position to determine as a fact whether the condition is what he thinks it to be and whether an operation is in fact necessary. His diagnosis may be wrong and honestly so.

"Nor is he able to determine whether as is pointed out in two of the cases, the constitution of the patient, or the presence of disease unknown to him might produce an untoward result. Hence, in determining the extent of his duty, and the fact of a breach of duty owing to a disregard of his responsibility, one must be careful in considering the language used, not to apply too strictly to the rule applicable where there exist actual facts, the existence of which the person owing the duty neglects at his peril."

In determining the appeal the Court adopted a very practical attitude when it cited with approval as a guide the language of a distinguished surgeon who had testified upon the trial as follows:

"I view a surgeon as one who looks upon operations as matters of serious importance, and when any patient comes to me I feel that he is placing himself in my hands and that I am advising him as to the very best procedure for him to adopt. If I start out by outlining to him the risks that attend every operation, and there are very serious risks in all operations, although they are infrequent perhaps, I think many patients would decline to have operations and so damage themselves very seriously by waiting to see what would happen without the operation. . . . The risks in an operation such as this are first of all that you might get bacterial infection of the wound. One might get tetanus; one might get gas gangrene; one might get gangrene of the finger as a result of straightening it out and so damaging the circulation. Those are very terrible complications to outline to a patient. I never saw any of them occur but they might occur."

The Court ruled that no liability could turn on simple assurances made by the doctor to the patient that she would be all right in a short time, saying in part:

"The only question of doubt in my mind arises from the statement that the plaintiff would be 'all right' in three weeks. The consensus of opinion is that a satisfactory result occurs in the vast majority of cases, though not a perfect result. But it cannot, I think, be held that such an expression is to be taken as a warranty that the operation will entirely remove or obliterate the cause of danger. It was perhaps, just as the word 'simple' is, by itself, a not completely accurate expression. But the duty of a surgeon is to be honest in fact and to express his own honest belief, and if he does so he ought not to be judged as if he had warranted a perfect cure

not found to be derelict in his duty in any meticulous criticism of his language."

The Court in summarizing its application of the law to the facts of the case stated:

"In this case, an operation was inevitable sometime, and if the disease had rapidly progressed, and an operation followed, and because of the delay was more difficult with serious results the plaintiff would no doubt have said 'If you had not advised me as you did, I would have gone on and had the operation and it would not have been so serious, and I would have had better results.' . . . Take the case of a patient having some throat or other trouble and her physician said that 'an operation should take place now as the disease is a progressive one, but you may go on for some time without an operation, will you now submit or delay it?' and the patient delayed with more serious results, could it be said that the physician would be legally liable in damages for a breach of duty?

"I cannot see that anything turns on the question as to whether the operation was an intricate or a simple one, because there is no charge that it was not skillfully performed by Dr. S. and proper attention thereafter given at the hospital. The fact that the operation was not successful was, as stated, not due to lack of care or skill.

"In the case of a patient consulting a surgeon or physician, a personal obligation exists and imposes upon the physician or surgeon on whom the patient relies because of his skill, the duty to exercise ordinary care and skill in any advice given, and if an operation, that the operation will be skillfully performed. To fasten on a physician or surgeon the obligation to discuss with his patient the possibilities and probabilities of an operation . . . in order that the patient might make an election as to when the operation shall take place, simply because of the fiduciary or confidential relationship existing between a patient and her surgeon or physician is to my mind unwarranted. . . ."

"It is quite conceivable that one surgeon might point out both sides of the question and give the patient the opportunity of electing, while another surgeon, equally careful and skillful, would not think it advisable to point out all the possibilities and probabilities and the serious consequences incidental to an operation, and to hold that if a physician or surgeon did not do so was a breach of duty would, in my opinion, be imposing upon them an unwarranted responsibility not justified by a decided authority that I have been able to find."

### Explosion of X-Ray Tubes

A young woman came to the office of a doctor specializing in x-ray therapy. She complained of eruptions in both of her hands. The doctor examined her and

found that she was suffering from psoriasis. The doctor undertook to give her an x-ray treatment amounting to  $\frac{1}{4}$  skin unit for each hand. No filter was used and the distance from the apparatus to the patient's hand was 8 in. The time of the treatment was to be two minutes. Several such treatments were given to her uneventfully at intervals of two weeks. Finally during the administration of such a treatment by the doctor to the patient, without warning the x-ray tube exploded, particles of glass dropped through the opening to the table below. The doctor examined the plaintiff's face, hands and her clothing to see if any glass had done her any damage, but he found no evidence of her having been struck with any broken glass.

The woman went away, apparently making no complaint, and was not seen by the doctor thereafter. He heard nothing further from the plaintiff until he received a letter from a lawyer telling him that after the patient had left his office she had gone to Europe on a trip and during the trip she had sustained painful reactions.

Suit was instituted against the doctor to recover damages charging that by reason of the negligence of the doctor permitting the x-ray tube to explode, she had sustained serious second- and third-degree burns.

The case came on for trial and at the time of trial there were no indications present on her hand to show that she had ever sustained any burns. There are, however, evidences of the original skin condition that the doctor had treated. On the trial the plaintiff told the story that she had undergone a long period of suffering due to the burns, but she failed to corroborate the said story by any medical testimony. At the close of her testimony, the Court directed a verdict in favor of the defendant.

### Claimed Negligence in Performing Herniotomy

A laborer while at work lifting a large plank suffered a sudden sharp, cutting pain in his right side, and when he consulted a physician it was found that he had sustained a right indirect inguinal hernia. He was referred, as a compensation patient, to a surgeon for operation. Under a spinal anesthesia an operation was performed upon the patient, the technic used being described by the doctor in his operation report as follows:

"Four-inch inguinal incision, aponeurosis of the external oblique divided, cord mobilized, sac dissected free, transfixed with chromic, ligated, and excised. Internal oblique brought down to shelving border of Poupart's ligament with interrupted chromic gut sutures, external oblique aponeurosis brought down to Poupart's ligament just above this with interrupted chromic. Skin closed with silk worm and pincets."

The patient remained in the hospital for three weeks and during the period of convalescence he developed a minor condition of epididymitis and a slight hemotoma at the upper angle of the wound. Both of these conditions subsided before he was discharged from the hospital as cured.

The patient thereafter instituted an action against the doctor charging him with negligence in performing the operation and charging specifically that as a result of said negligence, an infection set in in the region of the wound which has caused him pain and suffering ever since.

The case was put upon the calendar and when about to be reached for trial, plaintiff's attorney made numerous attempts to secure a settlement of the matter, but the attempts were unsuccessful. When the case was called for trial, the plaintiff, or his attorney, failed to appear and judgment by default was entered in favor of the doctor.

### VENEREAL DISEASE INFORMATION

For a number of years the U. S. Public Health Service has been publishing, for the information of physicians, health officers, and others, a monthly abstract journal known as "Venereal Disease Information." This publication contains usually one original article on a subject of general interest in connection with the venereal diseases and numerous abstracts from the current literature pertaining to these diseases. In the preparation of this abstract journal more than 350 of the leading medical journals of the

world are reviewed and abstracts made of the articles on this subject.

The cost of "Venereal Disease Information" is only 50 cents per annum, payable in advance to the Superintendent of Documents, Government Printing Office, Washington, D. C. It is desired to remind the reader that this nominal charge represents only a very small portion of the total expense of preparation, the journal being a contribution of the Public Health Service in its program with State and local health departments directed against the venereal diseases.



# Books

## BOOKS RECEIVED

[Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from this column will be made for review, as dictated by their merits, or in the interests of our readers.]

**Laboratory Medicine.—A Guide for Students and Practitioners** By Daniel Nicholson, M D Second Edition. Octavo of 506 pages, illustrated Philadelphia, Lea & Febiger, 1934. Cloth, \$6 50

**The Practical Medicine Series.—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery Series, 1933** Chicago, The Year Book Publishers [c.1933] The 1933 Year Book of Urology Edited by John H Cunningham, M D 12mo of 445 pages, illustrated Cloth, \$2 25

**Statistical Report of the Health of the Navy for the Year 1932—Admiralty, October, 1933,** O Murray, Secretary Octavo of 144 pages. London, His Majesty's Stationery Office, 1934 Paper, 2/6

**Treatment in General Practice.—By Harry Beckman** M D Second Edition Octavo of 889 pages Philadelphia, W B Saunders Company, 1934 Cloth, \$10 00

**Recent Advances in Vaccine and Serum Therapy.—By Alexander Fleming, and G F Petrie** Octavo of 463 pages Philadelphia, P Blakiston's Son & Company, 1934 Cloth, \$4 00

**The Pocket Anatomy.—By C H Fagge, M B** Ninth Edition 16mo of 333 pages Baltimore, William Wood & Company, 1933 Cloth \$2 00

**Aids to Pathological Technique.—By David H Haler** 16mo of 187 pages Baltimore, William Wood & Company, 1933 Cloth \$1 50

**Aids to Qualitative Inorganic Analysis.—By R G Austin** 16mo of 204 pages Baltimore, William Wood & Company 1933 Cloth, \$1 50

**Die Intrakutane Kanninchenmethode zur Auswertung von Diphtherie-Toxin und Antitoxin.—By Claus Jensen** Octavo of 211 pages, illustrated Copenhagen, Levin & Munksgaard, 1933 (Acta Pathologica et Microbiologica Scandinavica, Supplement XIV)

**Bright's Disease.—A Clinical Handbook for Practitioners and Senior Students** By J Norman Cruickshank, Octavo of 208 pages Baltimore William Wood & Company, 1933 Cloth \$3 75

**Hypertension and Nephritis.—By Arthur M Fishberg, M D** Third Edition Octavo of 668 pages, illustrated Philadelphia, Lea & Febiger, 1934 Cloth

## BOOKS REVIEWED

**Dietetics for the Clinician.—By Milton A. Bridges,** M D Octavo of 666 pages. Philadelphia, Lea & Febiger, 1933 Cloth, \$6 50

Dr Mosenthal, in his introduction to this work, says that 'The question of ideal nutrition is not a serious problem that must be thought out, designed, and adjusted for each person.' And it is to afford the clinician the means for so working, that Dr Bridges has prepared this very complete work on diets. There is an adequate discussion of the theories involved, and in presenting the pathology of the various diseases, he gives the basis or rationale for the diet he advises. The third part of the volume is given over to Pediatrics.

In his discussion of diets, the author has been most minute, and he has not missed a trick, the physician will find here the material to guide him in any case he may be possibly confronted with

L C JOHNSON

**Egg, Wheat or Milk-Free Diets.—With Recipes and Food Lists** By Ray M Balyeat, M D, Elmer M Buxton, M D and Ralph Bowen, M D Octavo of 149 pages, illustrated Philadelphia, J B Lippincott Co [c 1933] Cloth, \$2 50

This volume deals mostly with allergy. The general practitioner is shown how to apply dietetic rules in a scientific manner, and judge for himself, as to the merits of the system. "To help remove the pain from migraine, the wheeze and sneeze from asthma and hay fever, we offer this book" says the author, but he does more. He gives a very excellent summary not only of the subject of sensitivity, but reports of his own experience and that of his workers which cannot fail to interest and instruct one not too familiar with the details of this trend of thinking in the modern treatment of patients

L C JOHNSON

**Nervous Breakdown Its Cause and Cure.—By W Beran Wolfe** M D Octavo of 240 pages New York, Farrar & Rinehart, [c 1933] Cloth, \$2 50

This book has been written with a threefold purpose, to guide the general practitioner in his treatment, to help the patient's family and friends to understand the patient's conduct and to avoid tragic errors in their counsel and aid, but primarily to help the patient to help himself. In the seven chapters the author discusses causes, symptoms, and advice to patients. Three chapters are devoted to illustrative cases and cures. The author presents his material in a dramatic fashion

because of which the cases are clean cut, interesting and instructive

The financial cost of a neurosis is stupendous, consequently the earlier an adjustment can be brought about, the better it will be for the family as well as the patient. It will profit the physician to advise the relatives of a patient to read this book. In reinforcing the contacts between the patient and his physician, it makes a practical type of book to offer to a patient for study, and is very much worth while for the physician's perusal

HAROLD R MERWARTH

**The Technic of Local Anesthesia.—By Arthur E Hertzler, M D** Fifth Edition. Octavo of 292 pages, illustrated St Louis, C V Mosby Company, 1933 Cloth, \$5 00

In this new edition the author covers the field of local, spinal, and regional anesthesia in a masterly manner. Every region of the human body is included in the treatise, and detailed, well illustrated descriptions of the technic are given in the corresponding chapters. It is a great satisfaction to read a text book as devoid of unnecessary phraseology and as rich in practical advice as this one

GEORGE WEBB

**A Manual of Diseases of the Nose Throat and Ear.—By E B Gleason, M D** Seventh Edition 12mo of 651 pages, illustrated Philadelphia, W B Saunders Company 1933 Cloth, \$4 50

That this manual of diseases of the ear, nose and throat has proven its value is evidenced by the fact that it is passing through its sixth edition. For a book of its limited size, the author has done admirably in keeping his text up to date. The complications of otitis media and mastoiditis which have been receiving a great deal of attention recently, are included in the revision of the section on the ear. This book serves its purpose well as a ready manual for the student and practitioner

M C MYERSON

**Fundamentals of Biochemistry in Relation to Human Physiology.—By T R Parsons** Fourth Edition 12mo of 435 pages, illustrated Baltimore, William Wood & Company 1933 Cloth \$3 00

This volume deals with the biochemistry of food stuffs in a readable interesting style and at the same time presents the facts to date. There is an excellent chapter on the human machine which deals with energy exchange in normal metabolism. There follow chapters on enzymes, accessory food substances pig

ments, and applications of physical chemistry to physiology. Difficult subjects are presented in fine, readable, simple style. The book is highly recommended to those who wish a good, enjoyable review of the recent advances in biochemistry.

WILLIAM S. COLLENS

**The Teaching of Preventive Medicine in Europe.**—By Carl Prausnitz, M.D. Octavo of 180 pages, illustrated. New York, Oxford University Press, 1933. Cloth, \$3.75. (University of London, Heath Clark Lectures, 1932.)

This volume describes the steps being taken in various countries in Europe to teach preventive medicine. An introductory chapter sketches its history from early sporadic attempts to the present system of medical training in this field, postgraduate instruction, and the training of public health and social workers. Each ensuing chapter considers the method of training pursued in some particular country in Europe.

A. E. SHIPLEY

**Mental Hygiene in the Community.**—By Clara Bassett. Octavo of 394 pages. New York, The Macmillan Company, 1934. Cloth, \$3.50.

This book is an excellent survey of the various ramifications of mental hygiene and contains very little original material. In her twelve chapters the author attempts to prove the need of mental hygiene in all the professions, in medicine, nursing, social agencies, delinquency and law, parental education, the school, the church, industry, and recreation, but unfortunately does not show how this need can be met. The book is difficult to read and is apt to discourage any person looking for enlightenment, but it cannot be overlooked that the author in her introduction stated, "No attempt has been made to produce new material on any of the problems discussed. The purpose was rather to correlate and to organize available data into a form which was hoped might be of practical use."

J. L. MCCARTNEY

**The Practice of Surgery.**—By Russell Howard, M.S., and Alan Perry, M.S. Fourth Edition. Octavo of 1338 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$10.00.

The fourth edition is amply illustrated and covers the entire field which would be demanded of a student of surgery as his qualifications for final examination.

A review of many of the special subjects considered shows a very broad-minded attitude to both the causative factors and the therapeutic means employed at the present time. Very common expressions occur, such as "such-and-such is now the procedure, but it is too early to speak finally as to the final results." In a field which is very liberally devoted to fashions in therapy, this attitude is very refreshing to the teacher of surgery and very beneficial to the student.

This volume is the product of a judicious and a well-balanced surgeon. It is well worthy of a prominent place on the bookshelf of the student as well as the practitioner of surgery.

ROBERT F. BARBER

**A City Set on a Hill.**—The Significance of the Health Demonstration at Syracuse, N. Y. By C. E. A. Winslow, Dr. P. H. Octavo of 367 pages, illustrated. Garden City, N. Y., Doubleday, Doran & Company, 1934. Cloth, \$3.00. (Published for the Milbank Memorial Fund.)

In this book the author diligently holds a brief for great amplification of Public Health services. Syracuse, N. Y. is described from its beginning to its final place among cities of the first class. At the time (1923) when the Milbank Fund offers to spend a half million or more dollars in order to prove its contention that "public health is purchasable," Syracuse already has a fine record. In many health activities it has been first. For example, its Tuberculosis Clinic, established in 1908 is making an enviable record; its water and milk supplies are excellently guarded, etc. Mental hygiene, and a health propaganda bureau are examples for the effects of the depression. Personnel is curtailed. The book will be read with much interest by those acquainted with the Syracuse experiment. A sequel to Winslow's book might well be written by an unbiased observer after the elapse of a five year period without Fund direction.

FREDERICK S. WETHERELL

**Human Embryology and Morphology.**—By Sir Arthur Keith. Fifth Edition. Octavo of 558 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$10.00.

This latest revision of this book is indeed a masterpiece and is both complete and replete with informa-

tion and illustrations which simplify, and bring to the understanding of the every day physician, the many mysterious problems of embryology that have intrigued him from his early days in medicine.

The work more than fulfills the purpose for which it was intended. At the conclusion of each chapter there are notes and extensive bibliographies.

SAMUEL ZWERLING

**Handbook of Physiology.**—By the late W. D. Halliburton, M.D., and R. J. S. McDowall, M.B. Thirty-third edition. Octavo of 971 pages, illustrated. Philadelphia, P. Blakiston's Son & Company [1934]. Cloth, \$5.50.

In 1896, after a number of changes in editors, the editorship of this book was assumed by Professor W. D. Halliburton, who reconstructed it and nursed it through seventeen editions in twenty-nine years. Professor McDowall's official connection with the book began in 1928 as an editorial assistant to Halliburton, since whose death he has been responsible for its contents and make-up. The book's survival over a period of eighty-six years, in the face of remarkable advancement of the science of which it treats is sufficient evidence of its intrinsic value; and it is, now, so well and widely known among practitioners of medicine that no summary or analysis of its contents is called for in a press notice of this, its thirty-third edition.

J. C. CARDWELL

**The Queen Charlotte's Text-Book of Obstetrics.**—By Aleck W. Bourne, M.B. and others. Third Edition. Octavo of 679 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$5.25.

This excellent textbook on obstetrics contains a vast amount of practical information, of value not only to the medical student, but to the man in practice as well. To us, however, pictures of forceps deliveries in Sim's position are not very helpful; even axis traction forceps are carried out that way—one wonders how they do it.

It is gratifying to note that, although the usual formidable methods of infant resuscitation are described and illustrated, Queen Charlotte's Staff do not use them but depend upon carbon dioxide. Legislation may be necessary to bar these obsolete methods; it appears that no textbook may be written without including them. Nearly all the early vomitings of pregnancy are said to be neurotic in origin. This pleases the reviewer, but does not coincide with general opinion. The book is a fine one, well worth reading by obstetricians.

CHARLES A. GORDON

**Text-Book of Pathology.**—By Robert Muir, M.D. Third Edition. Octavo of 957 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$10.00.

The third edition of this textbook affords delightful and refreshing reading to the student of pathology. The subject is treated mainly from the viewpoint of the author's practical experience and, therefore, presents the subject in a more interesting manner than is usual. The author very frankly admits the exclusion of certain subjects which, he states, are best treated by the specialist.

For the American student, however, there may be some confusion because of the different terminology and the inclusion of certain practices which are not common in this country.

The illustrations are numerous and very creditable. The book makes a very valuable addition to the library of any pathologist and progressive man in medicine.

MAX LEDERER

**Paralysis in Children.**—By R. G. Gordon, M.D., and M. Forrester Brown, M.D. Octavo of 328 pages, illustrated. New York, Oxford University Press, 1933. Cloth, \$4.50.

This book is divided into 3 sections. The first deals with the physiology of movements. There are many diagrams to illustrate the muscle-nerve connections. Than follows in outline form a correlation of the clinical lesion. The causes of paralysis in children, including developmental defects, injury, inflammation and tumor are discussed as well as the diagnostic significance of physical signs.

Part II is devoted to a discussion of the individual diseases as the dystrophies, poliomyelitis, and other entities associated with paralysis.

Part III covers the general factors in treatment, namely, rest, massage, electricity, reeducation of voluntary movements, and finally the operative treatment of paralyses.

This book attempts to utilize a knowledge of neurology and the principles of orthopedic therapy as applied to children and succeeds admirably in its purpose. It is clearly written, and profusely illustrated.

STANLEY S. LAMM

## INCOMING PRESIDENT'S REMARKS TO THE HOUSE OF DELEGATES

ARTHUR J. BEDELL, M.D.

*Albany, N. Y.**Delivered on May 14, 1934, at the Opening of the House*

*Mr. Speaker and Members of the House of Delegates:*

It is with a deep sense of gratitude and appreciation that I address you this morning. Your expression of faith by electing me your President I take as an indication of your willingness to cooperate and for this I am indeed thankful. When I consider the contending forces which are at work to weaken or destroy the practice of medicine, I am conscious of my responsibility.

I pledge my allegiance to the constitution of the Medical Society of the State of New York and especially, "to extend medical knowledge and advance medical science; to elevate the standard of medical education; to secure the enactment and enforcement of just medical and public health laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members, and to protect them against imposition; and to enlighten and direct public opinion in regard to the problems of medicine and public health."

The height to which the lofty aims of our Society may rise depends upon the efforts of every member. We are in the midst of clashing factions. There are some who gaze into the distance and see visions of few obligations, little work and much pay. They, I fear, are deluded by fantastic dreams.

The sessions of the House of Delegates will give all an opportunity to express themselves and in the end I trust that the majority will rule against further

experimentation in the practice of medicine. There is no question in my mind but that the socialization of medicine eventually means the death of the patient.

There are no reasons why the profession of medicine should change its established order because of a temporary depression from which we will emerge if only given a chance. The basic underlying economic unit of our State is the home. The relations of this group have not changed, nor have the essential elements of religious life. Why then should the contacts with the sacredness of home medical service be altered?

The voices of the propagandists have been heard throughout the land. Their words are the same and their thoughts identical. There is a constant repetition of the need of some plan; that medicine must care for those who are sick; the doctors must be more equitably distributed; and that hospital and specialized service must be more readily accessible. These futile arguments are advanced at a time when a patient can reach a physician's office or have the physician come to his home more quickly than at any time in the history of this country.

I cannot agree with those who say that it is better to go somewhere than to stand still. I cannot see the logic of a program which is not based on the economic satisfaction of those who are to work under it. Nor do I feel that the appointment of another committee in our already top-heavy organization will assist in any material way to solve the national economic

riddle or the problems connected with the practice of medicine which are, as all broad-minded observers agree, mainly dependent upon unemployment.

There is no doubt in my mind that we will do more harm than good by aligning ourselves with the forces bent upon the destruction of the present system of private practice.

I know that each of you will display your usual wisdom after acquiring a complete knowledge of the uncertainties surrounding the introduction of any changes in the practice of medicine.

Regardless of any printed statement for or against the inauguration of a new system, the fact is incontrovertible that the main object of group medicine is to tie the employee to the employer.

I urge you to avoid entangling alliances and feel certain that you will not prove false to your true selves or to your constituency by accepting any resolution or procedure presented in any guise whatsoever which will change the order of the established practice until the proposed change has been thoroughly investigated and proven by actual operation to be worthy of your acceptance.

Let us constantly guard against the insidious ingrowth of socialized service of any type. Let us scrutinize every group insurance and hospitalization scheme so as to be convinced that the patient's welfare is protected and that the sick of our State are not subjected to exploitation. Incidentally do not forget that as a result of the national government's extension and too expansive private hospital construction so unfortunately advanced by propagandists, the medical profession may be further victimized.

Whenever you come in contact with those who are advocating a new system, I suggest that you inquire into the personal relationship of the proponent to the proposed measure to the end that you may see why he is trying to foist a method of unsatisfactory, unknown, unreliable medical service upon the unsuspecting and gullible public.

Very few physicians would be content to mechanically dole out pills and mechanically give advice, and even more mechani-

cally live the life of a hired servant. There is something more noble, more exalted, more satisfying, and more worthy of the true physician than just the mere serving of time for a pittance.

May the experience of the ages be with you in your deliberation.

The State Society has too many committees. They are too loosely connected to the parent organization, usurp too many functions, publish too many opinions which have not been passed upon by the legislative bodies of the Society and are, I believe, tending to retard our natural progress, for no emergency is sufficiently acute to require an immediate decision by one man or one committee.

I believe that there should be a change in the personnel of all the committees of this Society by the infusion of new blood; that is, one of the older members of the committee should be displaced by a new one. In this way we will be educating the younger men in the Society to take their part in its trained interest. I, therefore, recommend to the House of Delegates that they pass a resolution to this effect.

Gentlemen of the house, I believe that it should be clearly stated by you that no member of a committee should be permitted to address any organization on a subject under consideration by his committee without the consent of the Executive Committee.

The reports of the officers of the Society evidence careful, efficient and constructive management. I wish particularly to stress the change in appearance of the *STATE JOURNAL* and trust that during the next year even greater advances will be made to the end that the views of our State organization and its members will be clearly expressed.

I further suggest that each delegate act as a direct personal inspiration to his County Society in stimulating a greater interest in the *JOURNAL*. That a digest of the County Society activities be sent to the editor, that any gross infringement of law be reported, and that in every way the County Society be impressed with the necessity of maintaining a superior journal.

All of the members of our Society should work harder in their chosen profession to

accept the new discoveries that are proven worth while, to discard old methods which have ceased to fulfill their expectations and to give the public the benefit of their constant study and experience

When I hear so much about the old-fashioned general practitioner, I am chagrined, for there is not any member of this Society who would like to be classed in the group of men who did wonderfully well with the knowledge of fifty years ago, but who would now be considered woefully incompetent And, gentlemen, do

not forget that the propagandist wishes to have you laud the old-fashioned family practitioner so that after you have raised him on a high pedestal, the column may be smashed and the idol crumble in the dust, and from that dust the destroyers wish to have socialized medicine arise

Now, Gentlemen of the House, I ask your whole-hearted support to the end that our State Society may assume a larger role in the protection of the health of the people of the State

## SPECIAL LOW FARES AND TRANSPORTATION

*Arrangements to the National Meeting at Cleveland American Medical Association*

The following notice has been furnished the JOURNAL by The New York Central Lines

Special reduced railroad rates, on the basis of fare and one third for the round trip under what is known as the Certificate Plan, have been authorized for the annual meeting to be held in Cleveland in June

The popular "Lake Shore Limited" leaving Grand Central Terminal at 7:45 P.M. Eastern Standard Time, will meet the needs for a comfortable overnight trip, arriving Cleveland Union

Terminal at 8:30 A.M. the following morning

Delegates and others plan to leave via the "Lake Shore." Pullman reservations and railroad tickets may be secured from J. S. McAndrew, New York Central Line who is in charge of transportation arrangements for the group traveling from New York via the New York Central Mr. McAndrew may be reached by mail or phone at his office Room 1216 466 Lexington Avenue, telephone Murray Hill 2 8000, Extension 3492

## A MILK BORNE FATAL THROAT EPIDEMIC

A septic sore throat epidemic in Potsdam St Lawrence County, during which there were at least 76 and probably more cases with 4 deaths is reported in *Health News* published by the New York State Department of Health The date of onset of the first known case was April 12 Of the 76 patients for whom records are available 15 became ill during the week ending April 14 51 during the week ending April 21 and 10 during the week ending April 28

Clinically the disease was characterized by severe sore throat with considerable edema in some cases complicated by quincy Cervical adenitis was a prominent symptom and cases with joint involvement were observed Throat cultures positive for hemolytic streptococci were obtained from a number of patients Only 2 of the 76 cases were among individuals less than 15 years old Thirty five patients were males and 41 were females

All but 3 of the cases thus far investigated were among persons known to have used raw milk as a beverage coming from Dealer A Two of the three remaining patients ate in restaurants where Dealer A's milk was served This dealer sold about 200 quarts of raw milk daily less than one fifth of the entire village supply Dealer A's milk came exclusively from his own herd comprising 30 milch cows

His farm was visited from April 1 to April 8 by Mrs B employed in another community where she temporarily resided and where she

had just recovered from an attack of sore throat beginning on March 12 No throat cultures were taken during her attack Mrs B claims that she had nothing to do with the milking and that she did not enter the dairy barn during her stay at the farm Her husband Mr B, was regularly employed on the farm as a milker The second and only other milker Mr C stopped working on the farm on April 2 feeling perfectly well He however became ill with sore throat on April 9 Because Dealer A was planning to go away on a trip he rehired Mr C who returned on April 16 On this day Mr B developed septic sore throat

Samples of milk were taken from 15 cows in Dealer A's herd and hemolytic streptococci were found in specimens from 4 different cows Three of these cows showed no signs of gross mastitis The fourth cow had in the middle of February a teat injury which was treated with a teat dilator This cow had a suppurative mastitis at the time of examination with pus oozing from the injured right front teat

Although the investigation of the epidemic is not completed it has been concluded that raw milk sold by Dealer A was responsible for the series of cases It also seems likely that in some manner as yet unexplained the woman who visited the farm soon after her attack of sore throat may have been the original source of infection

## DRAINAGE OF THE THORACIC SPACES

HOWARD LILIENTHAL, M.D., F.A.C.S.

*New York City*

Thoracic surgery is a comparatively new but rapidly developing branch, and success in its application depends less upon manual dexterity than on a full understanding of physiological and mechanical principles.

The definition of a space is "a limited portion of extension; the distance between points or objects, either filled or unfilled." There are normally no empty spaces in the thorax which are not directly connected with the respiratory air current. The other so-called cavities and spaces within the chest such as the pericardial, pleural, and mediastinal, are occupied by lubricating fluid and it is only in pathological conditions that true spaces may be formed.\*

The first principle of drainage is the elimination of abnormal fluid or gas, including air, so that its walls can once more become approximated. A perfect result of drainage should be the sliding movement between the walls of the space, but this result is rarely ideally achieved, and we must expect more or less impairment of movement by adhesions. When actual obliteration cannot be brought about, there may be a permanent cavity containing gas or fluid, such as an aseptic pneumothorax which may do no harm, even though it exist for years and even though there may be both gas and fluid present.

## DRAINAGE OF THE PLEURA

The most frequent region which calls for drainage is the infected pleural sac, especially when there is frank suppuration.

So much has been written about empyema and its various methods of treatment that the description of well-known procedures will not be taken up here. However, in spite of all the literature on this subject only a small proportion of physicians realize what may be called the pathological mechanics of this diseased condition. For example, one hears of general empyema and sacculated empyema. Yet, general empyema is extremely rare; the author has not seen more than three or four general empyemas in his life. When present it means that the lung is com-

pressed upon its root as on a pedicle and that the pus within the pleura completely surrounds it. This can happen in infected trauma of the chest, as a gunshot wound with a quick pouring-out of fluid (blood or sanguinolent serum) which later becomes infected, or it may occur when the empyema has begun as an extremely quick development of pleuritic effusion with no time for adhesions to form around the source of infection, usually in the periphery of the lung (Fig. 1).

Most physicians have seen the mechanism of *general* empyema with gas instead of pus in cases of artificial pneumothorax induced for the collapse of the tuberculous lung. But even here adhesions usually prevent the picture from being perfect (Fig. 2).

Nearly all the large collections which are so often spoken of as general empyemas are in reality nothing more than very large sacculations in which the two pleural layers are adherent on the mediastinal side, and at the dome of the thorax and also at the base of the lung where the two layers become adherent upon the diaphragm (Fig. 2). Empyemas of this kind have probably had their origin in a suppurating point in the lung which has first produced pleural irritation and the pouring out of a considerable quantity of infected serum which later becomes pus with or without actual perforation of the pulmonary abscess.

In these cases the lung which has been pushed inward tends to adhere to the chest wall but is forced away by the increasing quantity of infected fluid. Or there may be a comparatively small empyema directly connected with a superficial abscess of the lung greater or smaller in size, the empyema, however, rapidly developing into one great pyothorax. If the collection of pus is small we have what we are all accustomed to regard as a sacculated or localized empyema and this may originate from any part of the pulmonary surface or there may even be several points of infection with as many distinct empyemas which have developed at different times and may even contain different organisms (Fig. 3).

There may be four distinct forms, designated as: (1) Peripheral empyema.

\* Abscess of the lung not being included in the normal cavities or spaces of the thorax is not taken up in this paper.

(2) Mesial empyema (often miscalled mediastinal). (3) The collection of pus between the diaphragm and the lung which the author has called supraphrenic empyema. The latter has a tendency to extend mesially and upward. It is sometimes necessary to diagnose between supraphrenic empyema and subphrenic abscess. This can easily be done when the disease is on the right side—the more usual site—by introducing a little oxygen into the peritoneal cavity through a needle and then making an x-ray film with the patient up-

a case which had existed for sixteen years unsuspected, without drainage either external or by way of a bronchus.

#### TREATMENT OF ACUTE EMPYEMA

First, there is aspiration of a fraction of the fluid with or without attempts at disinfection by the injection of chemicals through the needle. Various substances have been used for this injection from the formalin solution of the late J. B. Murphy to the modern coal-tar dyes which are used by the phthisiologists when they wish to

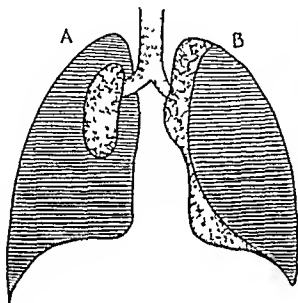


Fig 1—A. General empyema. The lung compressed from all sides upon its root.  
B. Large sacculated empyema, wrongly called general empyema. (From Lilienthal, "Thoracic Surgery," W. B. Saunders Co., 1925.)

right. On the left side a drink of carbonated water will produce a gastric bubble which will function in an x-ray film in the same manner as a pneumoperitoneum. Obviously sacculated empyemas which are adjacent may coalesce. (4) The fourth form is the interlobar empyema which results from infection by that part of the lung where one lobe touches another.

Far more frequently than is suspected peripheral lung abscesses of considerable size *unconnected with a bronchus* may infect the pleura.

#### CHRONICITY

Broadly, empyema is either acute or chronic. Acute empyema may be said to become chronic when systemic symptoms have greatly diminished, whether this is a few weeks or months, or even longer, after the inception of the disease. The chronic empyemas are usually those which have been drained although the author once saw



Fig 2—X-ray film of complete pneumothorax with the lung compressed from all sides, the analogue of general empyema.

get rid of a mixed infection in a tuberculous pyothorax.

Occasionally success follows this plan in the acute cases of nontuberculous disease. Of course, it cannot be considered in the light of true mechanical drainage, and yet, the mere fact that fluid is withdrawn, even though incompletely, does put it in that class of therapy.

Next to be considered is aspiration or withdrawal of most or all of the fluid with a needle or trocar and cannula, the latter being preferable because there is less danger of injuring the expanding lung. No matter how careful one may be, a certain

amount of air replacement cannot be prevented, but the author does not consider this as necessarily undesirable. On the contrary, it may be valuable especially when suction has been used because it prevents the too sudden expansion of the diseased lung. Some operators<sup>1</sup> have stated that airtight drainage should be very slowly accomplished (half a day). They believe that a bubble of air might prevent the complete adhesion of the visceral and parietal pleurae in the upper part of the chest which should take place in two days. As a matter of fact, however, this "upper part of

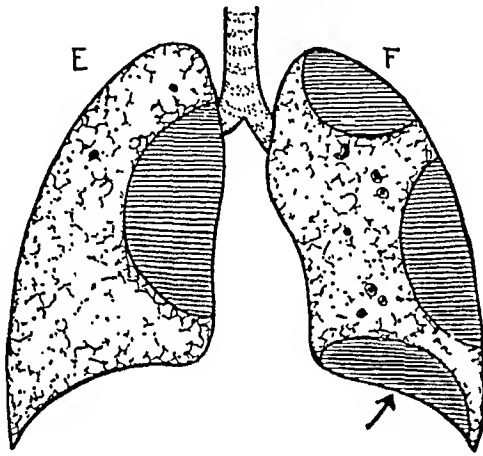


Fig. 3.—Distribution of empyema. E, Mesial empyema. F, Three sacculated empyemas, the lower one suprahrenic. (From Lilienthal, "Thoracic Surgery," W. B. Saunders Co., 1925.)

the chest" is not necessarily the upper part when the patient is recumbent; and, besides, it is only in rare instances that complete adhesion between the pleural layers can be so quickly accomplished. If there is, as often happens, a concomitant abscess of the lung, it would be impossible to secure quick adhesion. Only healthy lung can be thus expanded. The author has seldom employed suction when emptying an empyema, unless the fluid refused to flow otherwise. He reserves this aspiration for diagnostic purposes only. And here again should be emphasized the danger of infecting the deep layers of the chest wall on withdrawing the puncture needle from infected pleura or lung abscess. The author prefers to disconnect the syringe after aspiration leaving the needle in place and then, with another syringe or the same one disinfected, to inject a few minims of strong alcohol slowly as the needle is withdrawn. Phlegmonous infections of the chest wall have an extremely high mortality

mainly because they are at first deeply hidden and have reached great proportions by the time they are recognized, often too late to save life even by wide incision.

#### DRAINAGE THROUGH A TUBE, INTERCOSTAL, OR BY RIB RESECTION\*

This is accomplished in one of two ways. The first is to make a tiny incision in the skin, insert a trocar and cannula and pass a tube through the cannula after the trocar has been withdrawn, then fastening the tube by a suture to the thoracic wall so that it may not slip out. A small rubber catheter with many fenestrations is particularly useful for this form of drainage (Fig. 4). The other method is the usual one of resecting subperiosteally a small piece of rib, clamping and dividing the neurovascular bundle and then inserting a suitable soft-rubber tube. This opening for the tube is made fairly airtight by suturing the skin of the wound at one or both ends. The tube is held in place with the usual safety pin and adhesive plaster or still better, with a piece of gauze soaked in liquid adhesive plaster. The tube does not need to go far into the chest but we must be reasonably sure that it is in a position which will permit the complete or almost complete emptying of the pleura when the patient is upright. Many forms of tubes have been invented and re-invented usually with the idea of their not entering the chest too far, but when all sides have been argued an ordinary soft tube held in place as has been described will suffice. The external part is left long and some device for preventing the entrance of large quantities of air is applied. Here, also, numerous inventions from the simplest to the most absurdly complicated have been put forth. The author is guilty of having produced some of these himself, but from long experience he has concluded that the best way is to tie a finger-cot made of very thin flexible rubber to the end of the tube and to slit the tip of the finger-cot with scissors.† Every cough or strain, or even exhalation, will permit fluid and air to come

\* After any operation for thoracic drainage in a child a careful watch for scoliotic deformity during the development of the individual must be kept up, even though only a single rib has been resected. This is too often neglected because the child seems well. Brief monthly inspections should be made to make sure that the spine is not deviating. The cause of the scoliosis may be either bony adhesions between the ribs or great thickening, and fibrotic contraction of the perietal pleura.

† A glove finger is too stiff; the kind of cot which rolls upon the finger is very pliable and is best suited for this purpose.



out and every inspiration, especially a strong intake effort will collapse the walls of the valve. The popular name of flapper drain has been adopted. While the patient is unable to be up, the tube should be long enough to hang over the edge of the bed into a wide necked bottle or even a vessel on the floor. Under no circumstance should the tube pass through a cork or other stopper which would prevent the proper action of the valve. When the

phasize the point that it is best to drain at the most dependent portion of the pleural cavity, and it must be conceded that by resecting the twelfth rib one can reach the lowest level whether the patient is supine or erect, a condition which is not often the case when resection of higher ribs has been made. But fluoroscopic observations with the tube in place will reveal that the matter of 'lowest point' is not so important as one might think. I have often ob-

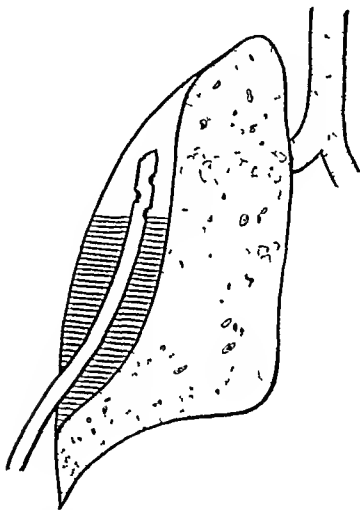
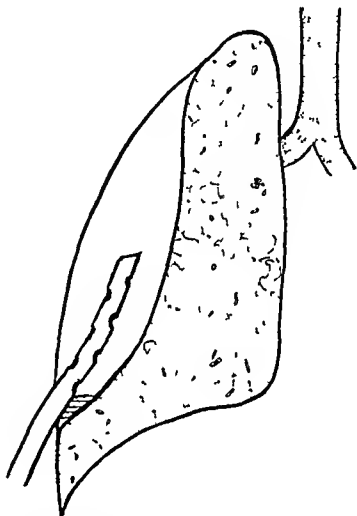


Fig. 4. Incorrect manner of fenestrating a catheter or other tube, the openings are all so near the inner end that the empyema has to fill to the end of the tube before actual drainage occurs. The second picture



illustrates the correct fenestration permitting almost complete emptying. (From Lilienthal, Thoracic Surgery, W. B. Saunders Co. 1925.)

patient is ambulant we use an infant's glass urinal or a hip flask which can easily be fastened to the patient's body without discomfort so long as he is not lying down (Fig. 5). Even firm, stiff-walled cavities will often eventually collapse under persistence with this form of treatment. By the way, the drainage opening into the chest should usually be a little higher than might seem effective, the dome of the diaphragm is always much higher in the chest than one would ordinarily expect. Nather and Ochsner<sup>2</sup> have the idea that by resecting the twelfth rib and passing the tube high into the chest through a small incision perfect drainage will be secured. They em-

served that adhesions will form between the diaphragm and the chest wall whether a tube of this kind emerges at a low point or not, while the difficulties of subsequent exploration of the chest will be much greater through the Nather and Ochsner wound than through a higher one. They state that this method has been employed "in all the cases of total empyema" admitted to the surgical clinic, etc. According to the author's definition of total empyema, this would not mean a great number of cases.

The drainage tube, whether intercostal or after rib resection, should never be large

enough to endanger or erode the intercostal vessels.

Should postoperative fever persist for four of five days or if it recurs later on, an x-ray examination must be made in order to disclose the possible presence of other sacculations which must in turn be treated. If more than one of these secondary pockets are disclosed a large thoracotomy should be made with or without the resection of a rib and all adhesions within

large complicating empyema. The interlobar disease is well suited to the form of drainage secured by packing with gauze immediately after it has been opened at the second stage.\* Manifestly, if the interlobar empyema has become adherent to the parietal pleura, this operation can be performed in one sitting.

#### BILATERAL EMPYEMA

It is always a matter for careful consideration whether or not both sides should be operated upon at the same time. Ordinarily we have preferred to drain the worse side and merely aspirate the better side at the first stage. Then days or even weeks later and after repeated aspirations as they become necessary, we treat the other side by one of the operative methods here discussed: intercostal incision with closed drainage, rib resection with closed drainage, or wide rib resection with packing. Thus far the author himself has used the packing only in the small sacculated empyemas.

#### CHRONIC EMPYEMA

We will first consider pleural pus sacs without an opening either through the chest wall or into a bronchus. These should be drained by one of the procedures described omitting, of course, attempts at emptying by repeated aspirations. The presence of calcification within the chest wall is a serious complication because it is obvious that this will prevent drainage by interfering with pulmonary expansion so that the cavity is held rigidly open. It is these chronic cases, and I am speaking now of the nontuberculous ones, in which efforts must be made to mobilize the lung by several months of suction drainage with the flapper valve. This will succeed in some apparently hopeless cases. When it is clear, however, that nothing has been gained it becomes necessary to decorticate or to make cross-hatching incisions through the visceral pleura down to lung tissue. This must be done through a wide inter-

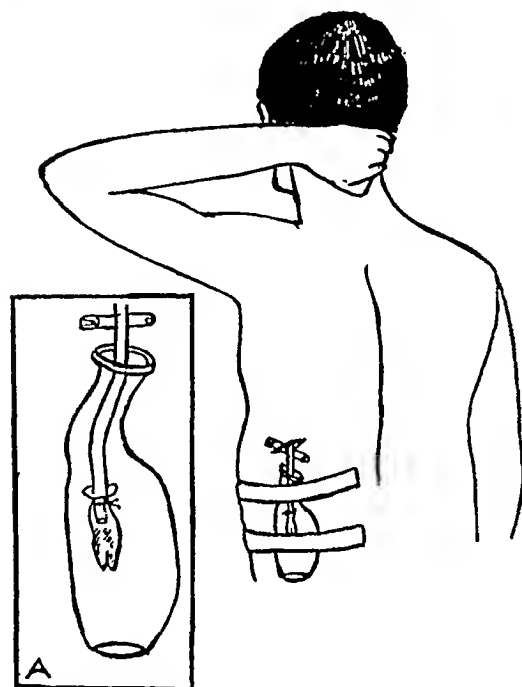


Fig. 5.—Ambulant patient with finger-cot drainage of empyema into child's urine bottle.  
Inset A.—Detail.

the chest should be broken down, converting the chambers into a single one and continuing the drainage as just described through the original opening, or one even lower, closing the larger wound by sutures.

#### INTERLOBAR EMPYEMA

If this condition exists without adhesion of lung to chest wall we usually expose the region through a free intercostal wound and produce adhesions with extrapleural packings around the proposed drainage site over which the rib has been resected and evacuate the pus at a later stage. While this may seem to be an operation of considerable magnitude it is in reality not shocking and it may prevent opening into a bronchus, always a serious affair because of the production of chronicity; it will also probably prevent the development of a

\* The latter method of treating empyema at a primary operation has been recently tested thoroughly in the service of Doctor John F. Connors (*Ann. Surg.* 1931, Vol. 94). Packing is, of course, one type of drainage and in some cases of empyema, especially in those not of too great size, is particularly suitable. Doctor Connors employs it even in extensive purulent pleuritis. It is necessary to resect enough ribs to get ample room for manipulation to break down adhesions when the cavity is anatomically complicated. The gauze must not be too firmly packed. It is removed on the second to the fourth day and as a rule need not be replaced. Coughing and straining are encouraged and the various complications of tube drainage are usually avoided.

costal incision preferably without resection of a rib, though it may be necessary to divide several ribs behind their angles in order to make room for intrathoracic manipulation. Decortication or cross hatching renders the lung capable of expansion by coughing or straining or by intrapharyngeal pressure with the aid of the anesthesia mask. A surprising amount of expansion will be revealed in a lung which may have been confined for many months or even for more than a year.

This part of the operation concluded, a counter incision for an airtight drain is made in the lower part of the chest in the posterior axillary line and a valve tube applied. The large wound of exposure is approximated by pericostal sutches and the soft parts sutured in the usual way.

By far the greater number of chronic empyemas are those in which drainage through the chest wall has been unsuccessful for months or even years. Here the ribs will have become shingled upon each other diminishing the capacity of the diseased half of the thorax and they will have become deformed so that they tend to be triangular instead of flat.<sup>3</sup> These ribs are also extremely hard and difficult to cut.

Without paying any attention to the location of the old drainage fistula, the exposure as above described, by intercostal incision and multiple division of ribs along their posterior ends, will be necessary. Everything possible should be done before resorting to thoracoplastic measures for bringing the chest wall down to the lung and it is rare indeed that the latter operation will be required.

This manner of bringing the collapsed lung to the chest wall was successfully employed by the author during the World War with excellent results. About 90 per cent of the patients operated upon were passed as fit for front line duty.\* This operation was new at the time and the author does not approve of regarding a "cured" patient of this kind as fit for strenuous work in the short time which has elapsed between the operation and the time of discharge from the hospital.

#### BRONCHIAL FISTULA COMPLICATING EMPYEMA

When there is an opening into a bronchus in chronic empyema, mobilization of the lung should be performed, and if the bron-

chial opening can be found, an incision around its circumference should be made, the bronchus pushed into the substance of the lung and sutured in place through soft pulmonary tissue. This will be successful, usually but not invariably. It should be remarked, however, that the further away from the chest wall a bronchial fistula is situated, the more likely will be its spontaneous closure.<sup>4</sup> If the bronchial fistula is found to come from a chronic lung abscess the latter will have to be packed and kept open until the empyema itself is obliterated. It will then tend to close and will require operation only when a mucous lining has formed between the skin and the bronchial opening.\*

#### DRAINAGE OF MEDIASTINUM

To refresh your memories let me say that the superior mediastinum extends from the dome of the chest to the body of the fourth thoracic vertebra behind and to the junction of the manubrium and gladiolus sterni in front. Roughly speaking the remainder of the mediastinum is divided into an anterior and posterior part. The anterior mediastinum is just below the superior in front and the posterior extends from the lower limit of the superior (the body of the fourth thoracic vertebra) down to the lower limit of the thorax. Speaking generally, the mediastinum with its contained organs lies between the two pleural sacs, but when operating either in front or behind, it should be remembered that the left pleura may cross to the right and the border of the right continue to the left of the midline. This is of enormous consequence when operating upon the mediastinum because of the danger that both pleural sacs may be simultaneously opened. Even with intrapharyngeal pneumatic pressure by the anesthesia apparatus the danger is great.<sup>†</sup> In the posterior mediastinum there is normally a crossing over the right pleura to the left side in the lower part of the chest. This should not ordinarily embarrass the surgeon, though it must be fully appreciated.

Suppuration or other conditions which might demand drainage of the mediastinum are not usually recognized during life, and when they are there is a tendency on the

\* In acute empyema complicated by an opening into a bronchus the cause of the fistula is usually a lung abscess which should have been treated as just described but before the development of chronicity.

† This will again be referred to in treatment of pericardiotomy.

\*About 50 of these cases were treated in Base Hospital 101 St. Nazaire.

part of the physician to regard the case as hopeless, although this is far from the fact. Indeed, many lives would be saved if suppurative mediastinitis were more often in the minds of the medical men as the possible cause of a number of otherwise unexplained phenomena. It is quite true that when there has been long-continued tension in the mediastinum the pressure upon the great veins produces stasis which accounts for the enlargement of these vessels in the upper chest, neck, face, and sometimes the arms; but in the acute stages there has not been time for this enlargement and the patient may easily perish before the sign appears. This is also the case with the so-called brassy cough and the vocal cord paralysis with its peculiar whispered hoarseness.

#### CAUSES OF SUPPURATIVE MEDIASTINITIS

Infection may originate from within the mediastinum or by extension from without. Suppuration of mediastinal lymph nodes is a not infrequent cause of mediastinitis acute or chronic and even osteomyelitis of the anterior parts of the vertebrae may extend into the posterior mediastinum usually by slow process; or osteomyelitis of the sternum may produce anterior mediastinitis. This is rarely recognized.

Other sources of infection are perforation of the esophagus by a sharp foreign body swallowed with the food, such as a fish bone or a chicken bone.\* Often this is not recognized, although if the precautions were taken in every case of mediastinitis to examine by endoscope the tracheobronchial region and the esophagus, the diagnosis would be more frequent. In the case of the esophagus in some rare instances drainage from within has been accomplished by merely enlarging the esophageal wound. This, however, is only possible in the more chronic cases when the mediastinitis has been localized because in the acute or fulminant the spread of infection is so rapid that only by complete drainage may life be saved.

By the way, in speaking of mediastinitis occurring from infection within the esophagus, it should be remembered that cellular tissue connecting immediately with the mediastinum runs into the neck and that infection of intrathoracic origin may have extended from the cervical regions.

In performing laryngectomy Crile advises two stages for the operation: the first being the aseptic mobilization of the larynx and upper trachea with gauze packing of the surrounding spaces, so that there may be blocking of the cellular tissue connecting with the mediastinum. At the second-stage removal of the larynx the danger of the progress of mediastinitis has been eliminated.

Of course, wounds inflicted through the chest wall directly into the mediastinum may become infected and produce mediastinitis, but exclusive of battle casualties these are not common.

Mesial empyema whether primary or secondary has been the cause of suppurative mediastinitis.

Dunham<sup>5</sup> has stated that there were 67 cases in 531 postmortem examinations of patients who had died within four weeks of diagnosed empyema (12.2 per cent). Yet that in 3,889 cases of empyema mediastinitis was not diagnosed during life. The cases were as a rule fulminant, and x-ray examination had therefore been probably omitted. Judging by the figures quoted above, this would seem to mean that there were a large number of undiagnosed cases of mediastinal infection among the 3,889 fatal (?) empyemas; probably in the neighborhood of 330 cases.\*

Not only may mediastinitis be the result of infection traveling downward from the neck, but the opposite may occur by extension upward into the neck, and it may even proceed downward below the diaphragm. From the subpleural spaces progressing into the interstitial tissues of the lung, infection may travel through the root of the lung into the mediastinum. This may occur especially in interstitial suppurative pneumonitis.

In passing let us also call to mind that air entering the interstitial spaces of the lung either from trauma of a bronchus or through a rupture of an air vesicle may produce emphysema of the mediastinum running up into the neck, down the arms, and rarely taking in a very great extent, usually bilateral, of the cellular tissues, so that it may be diagnosed on palpation by the usual crackling sounds.

This not infrequently comes about after rib fracture with tearing of the lung, whether by the above mechanism or not.

\* Dilation of the esophagus for stricture or obstruction has been known to produce mediastinitis.

\* There is some doubt whether all these 3,889 cases were fatal. The reader is referred to the original article.

In the case of a patient a number of years ago when Dr. Elsborg and the author were testing the former's original apparatus for intratracheal anesthesia in human beings, we wished to note how much pressure indicated in millimeters of mercury might be safely tolerated. The patient was a young woman who was being operated upon for appendicitis under intratracheal anesthesia and a pressure of sixty millimeters was employed. There was postoperative emphysema which within a few hours had spread over the chest, neck, arms, and face of the patient closing her eyes. Every trace of emphysema had disappeared within 48 hours. But in some cases when the emphysema becomes so great as to make pressure upon the mediastinal vessels there is danger to life and it is here that an incision through the episternal notch has been recommended by Tiegel<sup>6</sup> who placed a suction cup over the incision with excellent results, the emphysema disappearing in two days. When tense pneumothorax occurs in consequence of fracture of the ribs, drainage either by valve or direct suction into the resulting pneumothorax will also relieve the emphysema which manifestly is a mediastinal complication.

#### OPERATIVE TREATMENT OF SUPPURATION OF MEDIASTINUM

There seems to be altogether too little realization on the part of medical men of the possibilities and the great importance of early drainage of the infected mediastinum. Usually when the author has been called to see a patient, this disease has developed so far that operation is a last resort and the resulting mortality is therefore high. For some reason there is great fear of draining either the anterior or posterior mediastinum while in reality the danger is not more than in drainage of the pleura. The operation is more complicated and more difficult but this is no reason for delay.

The anterior part of the mediastinum can be reached in three ways

- (1) Through the suprasternal notch (superior mediastinum)
- (2) Through the sternum itself
- (3) Parasternally according to the location of the infection

In the acute suppuration of the superior space the spread is apt to be rapid and the safest thing is to make drainage through

the suprasternal region. This is done through a median incision with or without the addition of a cross cut at its lower limit. The mediastinum should be entered by slow careful dissection in order that neither great vessels nor pleurae be injured. Having entered the mediastinum it will be noted that with each strain or cough the pleural membranes will approximate and the fluid between them will be forced out. A multifenestrated soft tube should be inserted as far as required and permanent suction instituted.

In the case of a soldier in the A. E. F. who had been wounded by a piece of shell the foreign body lay far down in the anterior mediastinum. There was high fever and the case looked very serious. Before deciding to split the sternum the author called the late Dr. Sidney Yankauer who was able to insert a short endoscope through the suprasternal wound and to see the missile which appeared to be outside of the pericardium but was thrown into violent motion by the pulsations of the heart. Very carefully he removed it with forceps and, not having permanent suction apparatus at hand, the author placed a tube within the mediastinum, raised the foot of the bed on 18 inch blocks, and alternately a nurse and an enlisted man made suction with a syringe every 15 minutes for three days. On the second day the patient felt well, the temperature had dropped, and he was smoking cigarettes. There was full recovery.

This is merely an example of drainage of an acutely suppurating anterior mediastinitis. In another case following an operation for substernal goiter there was infection and drainage was carried out in the same manner, but this patient was in a modern hospital where continuous mechanical suction could be applied. She recovered without ever having been in mortal danger.

It may be necessary to split a greater part of the manubrium and gladiolus longitudinally with or without resection in order to gain perfect drainage (Milton's operation). One must be certain that the posterior periosteum has been divided. In any acute case the sudden audible snapping together of the pleurae when the patient strains or coughs is most striking as observed through the wound. As the wound granulates, the movements decrease and finally disappear.

It sometimes happens that the main part of the anterior mediastinal abscess lies in

such a location that it can be reached parasternally. A parasternal sagittal incision should be made, costal cartilages removed, and then careful blunt dissection performed into the infected part, always remembering that there is no certain way of telling whether the right anterior pleura may extend over to the left or the left anterior fold over to the right. (See Figs. 7, 8, and 9.)

Posterior mediastinitis may be drained by a major operation, although with less

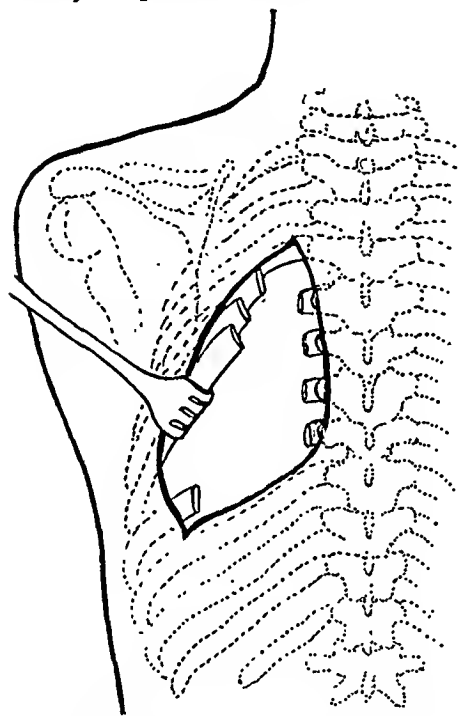


Fig. 6.—Diagram of rib sections and exposure for posterior mediastinotomy. (From Lilienthal, "Thoracic Surgery," W. B. Saunders Co., 1925.)

danger than that of draining the anterior space. The procedure is to incise just beyond the long spinal muscles, to divide the rhomboids if the upper part of the space must be reached, and to continue downward as far as seems necessary, resecting enough ribs to afford wide access (Fig. 6). Wounds of this kind may have to be revised, because there is a strong tendency for the ends of the resected ribs to approach each other. In making a lower posterior mediastinotomy on the left side the right pleura which normally extends across the median line in this region is in danger unless great care is exercised. If this accident has occurred it will always announce itself by a characteristic sucking sound. Dissection must be careful and digital exploration to find the aorta must be made. It lies toward the left of the

vertebral bodies. In right lower posterior mediastinotomy the pleura is always in the way and must be guarded. Having reached pus, the limits of the cavity should be explored if possible and packed with gauze.

It should be repeated here that the timidity already referred to in operating for the relief of infection of the mediastinum is entirely unwarranted. To wait for a sure diagnosis may mean the loss of the patient's life. At the same time it should be emphasized that one to whom these operations are a novelty would do well to avail himself of the assistance of a trained thoracic surgeon.

#### DRAINAGE OF THE PERICARDIUM

The pericardial sac may contain an enormous quantity of fluid. The author has removed more than 40 oz. of pus by pericardiotomy in the case of boy of fifteen<sup>7</sup> who finally made perfect and permanent recovery.\*

Much has been written on pericardiotomy for drainage but the operation still remains an unusual one. A few physical principles may be of interest.

First, the opening of the pericardium through an anterior left incision with or without resection of a cartilage is not a technically difficult procedure. It is important, of course, to avoid injuring the adjacent pleura, but this can usually be accomplished by working slowly, recognizing the pleura when it is reached, and pushing it carefully out of the way. Even when we are dealing with pericarditis complicating empyema it is best to keep the drainage of the two cavities separate because the empyema is more liable to contain gangrene-producing organisms than is the pericardium. The immediate danger of suppurative pericarditis with a large amount of fluid is the production of what is known as cardiac tamponade which signifies the impeding or checking of the cardiac diastole by pressure of the fluid surrounding the heart. There are five distinct locations for operations to drain the pericardium. First, to the left of the lower part of the sternum. Second, to the right of the lower sternum. Third, through the sternum. Fourth, deliberately through the pleura (a method only for special emerg-

\* Shipley, Arthur M.—Transactions of the American Surgical Society for 1927 states that the quantity of fluid in the pericardium may be as much as 7500cc. (Original reference in von Bergmann's Surgery—Translation published by Lea Brothers and Company, Philadelphia, Vol. II, p. 548, case of H. Kuemmel).

encies). Fifth, through the posterior mediastinum I have several times made the posterior exposure in the course of other operations, but I doubt that it will often be necessary as an approach for draining the pericardium.

The author's favorite route has been the one which passes to the left of the lower sternum about opposite the nipple or a little below. A sagittal incision is made from the third to the fifth interspace and a horizontal one of about equal length from the lower extremity of the first in-

may extend to the right. Therefore if possible one should identify the pleural reflection and push it carefully out of the path of operation.

It is a good procedure to suture the edge of the incised pericardium to the skin or to the other soft tissues of the chest wall so that the incision may not close prematurely. It does not seem to me to be necessary to put a permanent tube into the sac, but rather to have the patient recline and change position frequently so that drainage may be complete and constant.

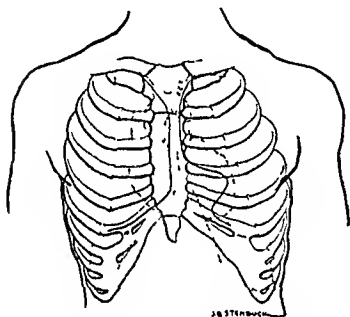


Fig. 7—Average relation of pleura to the sagittal midline of the body. (From Lilienthal, "Thoracic Surgery" W. B. Saunders Co., 1925.)

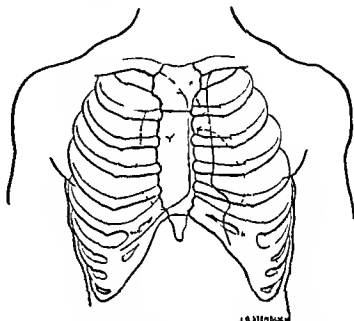


Fig. 8—Interpleural space. Extreme type of the left. (From Lilienthal, "Thoracic Surgery" W. B. Saunders Co., 1925.)

cision. A triangular flap of skin and muscle is made and as much as may seem necessary of the fifth cartilage is resected with forceps or cartilage knife beginning about half an inch from the sternal border. The anterior interspaces are usually wide here, and further resection is not necessary. Through this incision the internal mammary artery can be easily found and divided after double ligation. In the presence of effusions the apical part of the heart is against the anterior chest wall so that pulsations are strongly felt as soon as the pericardium is reached. This need not alarm the operator if he proceeds slowly and carefully. The inflamed pericardium is thickened and should be carefully incised with the scalpel. There is no certainty that the pleura may not be in the way as can easily be seen by referring to Figs. 7, 8, and 9, for although normally there is a triangle of safety as shown in Fig. 2, yet the right pleura may extend to the left across the midline, or the left

I do believe, however, that occasional irrigation with saline solution through a soft tube is advisable but one must be absolutely certain that the space for reflux is greater in area than the caliber of the tube for injection, otherwise the pericardial sac may become tensely filled producing cardiac tamponade.

Pool<sup>8</sup> and others have made use of Dakin's solution with apparently good results, but Beck<sup>9</sup> concludes from experiments with animals that the solvent properties of the Dakin's solution should forbid its employment unless there is considerable solid exudate upon the pericardium as is found in most cases of suppurative pericarditis.

The possibility of postoperative adhesions between the heart and the pericardium is naturally present, but this is only a possibility and, from what has been observed, it is a remote one.

In one of my cases followed for more than 23 years the functional result and the physical examination including x-ray re-

real values or the truth in speech may be disclosed more by the eyes and facial expression than by words. Ordinary social intercourse is often made possible by the verbal disguise of underlying feeling.

A more important contribution is made to speech functions by the midbrain in that it contains the red nucleus as a center for the control of automatic associated movements, *i.e.*, simple and constant rhythmic movements, such as the swimming movements of fish. These are greatly modified in the production of speech but are always a necessary element. Not only are the oral muscles associated in their action but also those of the face, eyes, head, and extremities. Even the general attitude and movements of the body are related to verbal formulation and expression.

As we pass toward the newer parts of the brain, the function of structures becomes increasingly complicated. In the diencephalon, the most cephalic portion of the brain stem, are found centers for the regulation of muscular tension, the modification of automatic associated movements and for the generation of the feeling tone which underlies all emotional phenomena.

The optic thalamus is not only a center for the correlation of sensory impulses but it also elaborates a feeling tone which pervades all mental functions and colors them with pleasure or displeasure. The normal adult has learned how to avoid free expression of feeling but children may be observed to pass quickly from crying to laughter on slight provocation. The adult may weep for joy or in a tragic situation burst forth in uncontrolled hysterical laughter. Such emotional instability seems to be a part of a primitive mode of response.

In order to give expression to the infinite combinations of feeling quality the crude, mechanical activities of the oral region were hopelessly inadequate. Provision was made therefore for more delicate adjustments by the development of the diencephalon and especially through the function of the corpus striatum. The oldest part of the corpus striatum, the globus pallidum, has the capacity of reducing muscular tension. It permits that degree of relaxation which is necessary in delicate and graceful movements.

As long as animal life remained in a fluid medium, the constant, rhythmic movements served a useful purpose, but it is

necessary for the amphibians to interrupt these movements. The reptile may spend much time at rest during which the automatic undulatory movements must cease. Also it is necessary for the higher animals to be able to maintain certain postures. These changes were made possible through the development of that newer part of the corpus striatum, the neostriatum. With this equipment the bird is able to express a remarkable variety in the pitch and tone qualities of its voice. The parrot even reproduces some of the human voice sounds.

Thus far in the evolution of the brain the old plan of having the gray matter surrounded by white matter was followed. This arrangement served the purposes of primitive animal life but with the increasing need of means of contact with the external world and the greater complexity in response, provision had to be made for more and more gray matter. This was accomplished in the cerebellum and the cerebrum. In these parts of the brain because the gray matter forms the cortex of the brain substance, there is much more opportunity for expansion.

The function of the cerebellum in coordinating muscular activity is well known. Included in this is a coordination of impulses coming from the cerebral cortex with the simple and automatic mechanisms. Complex and voluntary activities are thus carried out through the harmonious action of lower centers of response. Walking is made possible without undue waste of energy. All forms of verbal expression depend upon this correlation.

The functions of the cerebrum are so varied that they must be considered separately. In general the parietal region is occupied with the finer discriminations of bodily sensations. This includes the appreciation of the qualities of roughness and texture and a recognition of the sensations which permit an object to be recognized when placed in the hand. Undoubtedly a synthesis of these sensations with that of pressure is an important element in writing.

Visual phenomena have long been associated with the functions of the occipital lobe and particularly the region of the calcarine fissure. The rather simple impressions of color, size, form, distance, and their relation in space are here synthesized and they may then be recognized. All of



this is incorporated in the material utilized in speech and is necessary in the visual perception of written language.

In the temporal lobes, associated chiefly with the higher elaborations of auditory functions stimuli from the ear are correlated and synthesized. Obviously it must be intact in order to be receptive to spoken language.

No part of the brain has been subject to so much speculation and philosophical discussion as the frontal lobes. For a long time this was considered the silent area because it yielded little clinical evidence when diseased or injured. Nevertheless, it has long been regarded as a part of the brain in which the final correlation and synthesis of sensory impressions take place. Here also occurs the selection and discharge of appropriate motor responses. Its development is coordinate with the growth of intelligence and culture. Disease of the frontal lobes leads to gross personality changes and the loss of those refinements in social contact which are characteristic of most highly civilized peoples.

Ordinarily when an attempt is made to correlate speech functions with brain physiology attention is directed to the region of the fissure of Rolando. A few decades ago, when "centers" for speech and writing were assumed and the connections between them were freely illustrated with diagrams, it seemed as though the cerebral cortex could be understood with the aid of a mechanized scheme. Better knowledge of the nervous mechanism underlying the language function has rendered useless any such simplification. As a matter of fact it was based in part upon inaccurate observations.

A brief survey of our present knowledge of the language function will indicate the complexity of the so-called higher mental or psychic processes and how the nervous system participates in them. In the beginning speech is merely a form of emotional expression. The infant's first communications are those of pleasure or discomfort. The marked emotional liability at this time suggests that the thalamus is as yet only imperfectly controlled by the cortex. The associated impulsive and generalized motor activities also seem to be the expression of poorly regulated automatic nervous mechanisms. After several months the sounds gradually become conventionalized and elaborated into words. The choice or the

construction of words is often associated with potent sensory experiences or with actual physical activities. A three-year-old child refers to a radiator as a "burniator" and to a nut-cracker as a "squeeze-nutter." In the former instance a word is constructed on the basis of a painful experience, in the latter the child is describing a process. This is much simpler than dealing with the more complex conception of the purpose of the instrument. In other words, the early forms of symbolization in language are simple, direct, and descriptive.

As mental development progresses the individual is not permitted to give free expression to his impulses and feelings. His communications are more logical and less intuitive. Language and the underlying emotions are more dissociated. Even the accessory motor activities are reduced to a minimum in the calm, deliberate linguistic productions of the mature adult. Further intellectual progress usually leads to generalization and abstraction. Any particular situation is comprehended and dealt with through the application of principles. Interest lies more in the direction of the interpretation of experience than in mere description. In contrast to this the average adult is concerned with actual and immediate situations which he discusses in concrete terms. A large proportion of his conversation is motivated by personal feeling and consists of a detailed description of daily experiences.

Whenever there is an organic or toxic condition affecting speech functions this evolution of linguistic formulation and expression is reversed. In other words, the more recently acquired and the complex and voluntary aspects of speech suffer more than the elementary and automatic. Moreover, those expressions which are highly charged with emotion—exclamations and oaths—are least often affected.

Additional insight into the subtleties of cortical activity is obtained from the observation that aphasic patients may be able to sing simple airs in time and with correct rhythm provided no attempt is made to say the words. This leads us to the consideration that musical expression is generally more closely associated with emotion than is spoken language. Children and primitive people respond to rhythm and simple melodies before they can deal with language. We have also observed that in

the evolution of the brain provision was made for the production of musical sounds before there was any means of communication like the human language.

The relation of feeling to speech functions also may be observed in persons who stutter. Their thinking and speech is thus impaired in proportion to the increase in emotional tension. Profound reactions of fear, anxiety, anger, pain, or affection give rise to disturbances in breathing, tone quality, and pitch of voice as well as to disordered articulation. Under such conditions acute attacks of stuttering may appear.\* When the emotional reaction is most intense, speech may be lost.

When we study the manifestations of personality disorder in terms of altered speech function, the influence of feeling is still more evident. The compulsive neurotic may be obsessed with the recurrence of obscene expressions which he feels he has to blurt out, or he may have to repeat a verbal formula before he can proceed with other activities. The anxiety neurotic may be so troubled with difficulty in breathing that he gets into a panic, may be unable to speak and may feel he is going to die.

With the additional emotional energy which is available for the excited and elated manic patient thoughts come so rapidly that he is unable to give them full expression. He is no longer hampered by logical sequence and skips from one topic to another with only superficial association. In contrast to this the depressed patient seems overwhelmed by the labor of formulating and expressing his thoughts. His responses are delayed and monosyllabic and he may not talk at all.

It is somewhat speculative to translate into brain physiology these marked alterations in speech function. As yet the facilities for measuring the changes which may be taking place at a physiological level are very meager. It appears, however, that intense emotional conflict seriously interferes with cortical function and especially that of the prefrontal region. Clinically there is impairment of reasoning and judgment. A vicious circle is established in which there is interference with the cortical regulation of the thalamic centers of feeling tone. According to the predisposition to

illness and the general feeling attitude in the particular situation an excess of feeling leading to elation or depression may be generated. Through an excess in feeling tone resulting in elation all functions of the individual are accelerated. The facts of reality lose much of their painful content, and life's problems may be dealt with facetiously and as though they were not really worthy of serious consideration. For awhile the person plays with the facts of life and emotional tension is released through frank expression of feeling and increased motor activity.

On the other hand, if a person is gradually overwhelmed by the constant gnawing of internal conflict and by a series of painful events an excess of feeling of the depressive type pervades all mental functions and seriously interferes with cortical activities. All sensory experiences are then colored by this feeling and all functions may be retarded. Emotional tension may also be expressed in restless or agitated behavior. With general retardation there is a reduction in the amount of talk and responses may be delayed or even not obtained. This retardation is in direct proportion to the painful emotional content of the subject under consideration and the same person may be able to deal reasonably well with neutral topics.

Abnormal conditions such as these are better comprehended in psychological terms, partly because our knowledge of the related brain physiology is so deficient. The physiological aspects are more strongly suggested in the acute stages of schizophrenic disorders, especially in the catatonic state. In such a condition a patient may automatically repeat what is said just as the child learning to talk does when he fails to comprehend what has been said or has not yet learned a response. He may also meet every suggestion with an automatic negative response. When overwhelmed by his problems and distraught with conflicting impulses he may lay with his muscles tense as though all set for action and yet be unable to respond. Occasionally such a patient on recovering will tell us that he was aware of the situation but could not decide upon a course of action. In the more active phases of the acute catatonic state the responses are usually impulsive and poorly directed. They tend to be repeated in an automatic way and serve little purpose other than to give expression to dream-like experiences.

\*Brown, F. W.: Stuttering: Its neuropsychological basis and probable causation, *Amer. Jour. Orthopsychiat.* 2:363.

Blanton, S.: Speech Disorders as A Medical Problem, *N. Y. State Jour. Med.* 33:215, 1933.

In the later stages of the illness when the external world has been distorted and reconstructed according to the fanciful desires of the patient a new set of symbols may be intermingled with those of the past. The symbols employed are individualistic and for awhile at least have considerable emotional value. Logical sequence in thoughts disappears as the patient loses emotional contact with his fellow beings. A word or a syllable may have value for him which is ordinarily expressed in a sentence or a paragraph. Desires are gratified through hallucinations and problems are solved by delusional formations. As the energy associated with former conflicts is thus dissipated the talk and other symbolic expressions may become empty formulae or the records of fantastic abstractions.

All of these tendencies may be observed in the so called normal individual. Thoughts and tunes tend to recur in spite of our conscious desires. Anxiety feelings are usually disclosed by the manner of speech and are the most important factors in stuttering. Some of us talk rapidly and under great pressure. Our conversation tends to be flighty and usually deals with trivial matters. Some are habitually or periodically reticent and prefer to listen. It is only by deliberate concentration that we select from irrelevant thoughts those which are appropriate for the occasion. If we attempted to give expression to every

impulse, feeling, and to all fleeting and poorly formed thoughts, our productions certainly would seem to be quite abnormal.

It would seem, therefore, that a disorder of speech is a reflection of a certain type of personality that has had difficulty in making a normal adjustment. The particular form of disorder may be related to personal problems. Emotional conflicts and the feeling of having been thwarted seriously interfere with the delicate adjustments of the cerebral cortex and the more primitive nervous tendencies then gain expression. Deliberate choice in the selection of a suitable response is gradually replaced by impulsive and automatic behavior. Speech functions may be greatly accelerated by feelings of elation or retarded by depression.

Disorders of speech may therefore be an expression of intimate personal problems. They may be determined or accentuated by actual defects in the brain, but they are also a reflection of brain physiology. In order to understand them fully and to deal with them effectively it is necessary to ascertain the underlying difficulties. Otherwise the treatment may be purely symptomatic and palliative. As yet the abnormalities in brain physiology seldom can be altered by direct approach but much can be done with the related psychological conditions and particularly the emotional factors in maladjustment.

## ERRORS IN THE PRACTICE OF PHYSICAL THERAPY

LEE A HADLEY, M.D.  
*Syracuse*

More than seventy years ago Oliver Wendell Holmes remarked on the changes that he had witnessed during his medical practice. He further stated that causes as opposed to symptoms were coming more and more to claim the attention of the physicians of that time. These two observations have a special significance for those of us to day who are interested in the development of physical medicine. Failure is likely to follow symptomatic or empirical treatment. It is unfair to treat an undiagnosed condition by a "trial of physical therapy." Mistakes may occur in the prescription or administration of a treatment but more frequently, I believe, in a disregard of the underlying causes. In other words, every effort should be made to

establish a complete pathological picture before instituting any treatment and then base the treatment upon the indications. These are commonplace truisms which are too often disregarded.

Mrs R received fourteen treatments to the leg for sciatica without benefit. She was really suffering from arthritis of the spine. Another patient complained of pain in the left shoulder and received diathermy to that part. X-ray revealed malignant bone tumor of the upper end of the humerus, from which he died a short time later.

X-ray is a useful aid in the avoidance of mistakes in treatment. By this means some underlying condition may be discovered which requires surgery or other

treatment before the institution of physical therapy. In traumatic cases, the underlying bony structure must be studied. Malalignment of bony parts or bone block cannot be relieved by physical therapy. Forced movement of a joint showing destruction of articular cartilage is likely to increase the disability.

The custom of "breaking up adhesions" under an anesthetic merits *the strongest condemnation*. It is true that while the patient is insensitive to pain, the mobility may be quite free. The following day, however, the joint will likely be more firmly immobilized than before with pain increased and protective muscle spasm, particularly upon attempted motion, greater than before the forcible manipulation. The ultimate result is better if forcible interference is withheld and the patient properly treated by physical therapeutic means, even though the progress may be slow. I have seen both the shoulder and the elbow practically ankylosed as a result of forcible manipulation given to increase motion. I have aggravated cases of chronic productive arthritis by too forcibly attempting to mobilize the joints. Gentle treatment is indicated in both traumatic and arthritic joint disease.

Too active or too frequent treatment may retard recovery. The condition of Mr. C. treated for a sprain of the left sacro-iliac joint was materially aggravated by too vigorous massage of the lumbar muscles. Discontinuance of all treatments for a few days is sometimes beneficial.

Failure may likewise result from lack of cooperation on the part of the patient. Where possible, particularly in traumatic cases, the patient should carry on resistive exercises by himself between treatments. These should be definitely prescribed both as to kind and amount. Beside maintaining the patient's interest, they serve to mobilize the parts and to voluntarily develop the strength of muscles, particularly those whose activity has been limited by the injury. Splints may be necessary for support or to prevent overstretching of weakened muscles.

The persistent sinus which refuses to heal cannot be influenced by cauterizing the exuberant granulation tissue nor by local exhibition of any application to the overlying surfaces. Radiation through quartz rods, ionization, or any other treatment within the sinus itself will be un-

availing until the sequestrum, broken-down gland, or other underlying cause has been removed. X-ray of the sinus, after injection of iodized oil, is likely to prove a valuable diagnostic aid.

Radiculitis has been responsible for more failures than any other condition that I have ever treated. Many of these patients complained of pain in the arm or shoulder, sometimes with numbness of the hands. The painful parts were treated without success, the causal pathology being located at the roots of the brachial plexus. Proper therapy to the cervical region usually relieves the pain in the arm.

Paradoxically, radiculitis, is frequently overlooked because of too much attention being paid to its principal symptom—pain. This is due to a perineuritis of the nerve root where it passes through the unyielding intervertebral foramen. The condition is characterized by pain referred to the cutaneous distribution of the nerve, tenderness upon deep pressure over the nerve roots and aggravation of discomfort upon coughing, sneezing, or movement of the spine.

Clinically, the picture varies somewhat depending upon the level involved. Upper cervical radiculitis produces pain in the back of the head. Involvement from midcervical to upper thoracic, produces pain referred to the shoulder and down the arm. If the upper thoracic level is affected, the patient complains of pain in the chest. This is sometimes severe and may simulate angina, pleurisy, or intercostal neuritis. Involvement of the lower dorsal region results in abdominal pain resembling stomach or gall-bladder disease, appendicitis, renal and even pelvic disease. Carnett states that many of those patients whose pelvic or abdominal symptoms are unrelieved by repeated operations, are frequently suffering from this condition. Lumbar radiculitis, of course, produces pain in the legs. The author has mistaken this for sciatic neuritis. In most cases, the condition responds promptly to treatment applied to the proper nerve roots.

Physical therapy, then, to reach and hold its rightful place in medicine must demonstrate its value by the results which it shows after treatment of causes rather than of symptoms. For if certain colors remain in the kaleidoscopic picture of medical practice, it is only because they have proven irreplaceable in the changing pattern of therapeutic procedure.

## THE FUNCTION OF A CANCER COMMITTEE OF A HOSPITAL STAFF

JOHN M SWAN, MD FACP

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The New York State Committee of the American Society for the Control of Cancer has been engaged for the past seven years in a study of the cancer situation in the State of New York. In the course of this study the Committee has reached the conclusion that an important contribution to the understanding of cancer and the care of the cancer patient can be made by a systematic examination of the tumor material which presents itself in the hospitals operating throughout the State. The Committee has suggested as the minimum membership in a Cancer Committee of a hospital staff a general surgeon, an internist, the pathologist, and the radiologist. Other members of the staff may and should be added to this basic group as the work of the Committee develops and as interest in the work of the Committee increases among the general membership of the Staff of the Hospital.

The following suggestions are made as being appropriate subjects for investigation by the Cancer Committee

(1) A statistical study of the tumor material admitted during the year from the point of view of its relation to the total number of admissions to the hospital and its division into benign growths, precancerous lesions, and malignant growths

Table I shows these facts for 1929, and

### TABLE I—1929 ADMISSIONS

Admitted during the year			
Benign tumors			57
Malignant		15	
Bladder		42	
Breast			
Gastroin			
Bile duct	1		
Colon	1		
Liver	1		
Pancreas	2		
Sigmoid	3		
Stomach	2		
	<hr/>	10	
Miscellaneous			5
Carcinosis	2		
Lymphnephroma	1		
Mediastinum	1		
Osteogenic sarcoma	1		
	<hr/>	5	
Ovary		2	
Prostate		1	
Rectum		2	
Skin		2	
Testis		1	
Uterus		9	
	<hr/>	42	57
Died in the hospital	9		57
Died after leaving the hospital	42		
Living December 31 1929	36		
	<hr/>	57	

Table II for 1932 obtained from the records of the Park Avenue Hospital, Rochester, a general hospital of 80 adult bed capacity

Table III summarizes these facts for the five years 1928-1932, inclusive. Attention is invited to the diminution in the percentage of cases of malignant disease during this period.

(2) A comparison of the clinical diagnosis with the pathological diagnosis

(3) The length of time elapsing between the appearance of the first symptom and the application of the patient for advice

Table IV illustrates the information thus obtained in cases of breast tumors

In Case No 19,951, the patient had noticed a lump in the right breast for a year, and three months before she applied for advice had begun to complain of pain in the left hip. The x ray showed metastatic carcinoma of the left femur. The surgeon in charge of the case decided to remove the breast because the tumor was movable, the nipple was not retracted, and there were no palpable lymph nodes in the axilla. He thought that the removal of the breast might prevent further metastases and that some benefit might be obtained by deep roentgen therapy applied to the metastasis in the femur. The patient remained in the hospital 41 days after the operation, but died 19 days later at home without having had roentgen irradiation. The ques-

TABLE II—1932 ADMISSIONS

				16	71
				20	
				35	
Breast			11		
Cervical lymph nodes			1		
Gastro intestinal tract			8		
Appendix (carcinoid)		1			
Colon		1			
Gallbladder		1			
Rectum		1			
Stomach		4			
			8		
Ovary				1	
Prostate				5	
Sarcoma				2	
Skin (including vulva)				1	
Uterus				4	
Body		1			
Cervix		3			
			4		
Vagina				1	
				35	71
				71	71
Died in hospital			9		
Died after leaving hospital			10		
Living December 31, 1932			16		
			35		
Total admissions	1612	Tumor material,	44	per cent	

tion has been raised as to the advisability of the mammectomy in view of the bone metastasis.

Case No. 19,408 is known to be living without recurrence at the present time.

Attention should be called to the length of time the tumors had been present before these patients applied for treatment. In my opinion this is one reason why the results of surgical treatment in breast cancer are not better.

Cancer of the gastro-intestinal tract is our greatest problem. Table V gives a summary of the patients admitted in 1929 with lesions of the gastro-intestinal tract. It will be noted that the diagnosis of some of these cases is made on purely clinical grounds.

Attention is invited to case No. 19,790. The man, who was admitted with a diagnosis of postoperative adhesions had a

cholecystectomy and an appendectomy in August with a histological diagnosis of chronic cholecystitis. He was discharged convalescent 16 days after operation. This patient was readmitted in October, had a second celiotomy, and without further histological study appears in the hospital records as a case of "malignant growth (probably carcinoma) of the head of the pancreas."

The author has wondered whether it is not possible in every case of exploratory celiotomy to remove a lymph node from the neighborhood of the lesion without seriously complicating the postoperative recovery of the patient.

The author has formed the opinion that many hospital records of cases of cancer are entirely inadequate for the purpose of forming a picture of the condition subsequent to the discharge of the patient.

TABLE III.—FIVE-YEAR SUMMARY

	1928	1929	1930	1931	1932
Admissions .....	1818	1929	1766	1783	1612
Cases of cancer and suspected cancer.....	38	57	73	63	71
Per cent .....	2.09	2.17	4.11	3.53	4.4
Died in hospital.....	7	9	7	5	9
Died after leaving hospital.....	6	12	7	9	10
Total .....	13	21	14	14	19
Per cent .....	40.6	36.84	19.17	22.22	26.7
Living at the end of the year.....	19	36	59	49	52
Per cent .....	59.4	63.16	80.83	77.77	73.3
Benign cases .....	6	15	29	37	16
Per cent .....	15.78	26.31	39.72	58.73	22.53
Precancerous cases .....	...	...	5	...	20
Per cent .....	...	...	6.86	...	28.17
Malignant cases .....	32	42	39	26	35
Per cent .....	84.21	73.69	53.42	41.27	49.3

TABLE IV.—BREAST TUMORS

Case No.	Admitting diagnosis	Final diagnosis	Sex and age	Chief symptom	Duration	Operation	Histology	Result
18,695	Carcinoma of breast	Carcinoma of breast	F. 75	Lump in the breast and hemorrhage	2 years..	2.4..... Mammectomy	Adenopapilloduct carcinoma	Discharged 41 days PO. Died at home 244 days later of myocardial disease
18,810	Metastatic carcinoma of axillary lymph nodes from carcinoma of breast	Metastatic carcinoma of axillary lymph nodes	F. 51	Pain in right arm and palpable axillary gland	2 years..	2.5..... Axillary dissection	Metastatic carcinoma	Discharged 4 days PO. Died at home 240 days later
18,872	Benign tumor, left breast	Adenocarcinoma, left breast	F. 40	Lump in left breast	3 months	3.5..... Radical breast amputation	Adenocarcinoma	Discharged 15 days PO. Died at home
19,102	Carcinoma of breast	Carcinoma of breast	F. 38	Tumor in right breast	6 months	4.15..... Mammectomy only	Carcinoma simplex	Discharged 3 days PO. Died at home 137 days later
19,408	Mammary adenoma	Carcinoma of breast	F. 46	Tightness and soreness in right breast	6 months	6.13..... Mammectomy	Chronic cystic mastitis with a carcinoma-tous nodule	Discharged 5 days PO.
19,951	Cancer of the breast (R), chronic arthritis	Carcinoma of breast (R), metastatic carcinoma of femur (L)	F. 67	Pain in left hip, lump in breast	3 months 1 year	9.24..... Mammectomy	Scirrhus carcinoma	Discharged 41 days PO. Died at home 19 days later
20,293	Adenofibroma, left breast	Squamous celled carcinoma, left breast	F. 40	Mass in left breast	2 years..	11.21..... Mammectomy	Squamous celled carcinoma, very rapidly growing	Discharged days PO. 10

Table VI shows the length of time elapsing between the appearance of symptoms and the application of the patient for advice in a group of cases admitted to the hospital during 1925. These patients are all dead with the exception of the two marked with an asterisk. Further comment on these two cases will be made later.

(4) A comparison of the diagnosis made when the patient leaves the hospital and the recorded cause of death on the death certificates of those patients who die after leaving the hospital.

Tables VII and VIII illustrate this feature. Note in Table VII Case No. 12,324, carcinoma of the bladder, confirmed by histological study in which the death certificate reads "Acute pericarditis and acute nephritis."

Case No. 11,241, in which the diagnosis was gastric ulcer, not confirmed by pathological diagnosis, in which the surgeon reported that the patient developed cancer

later, but in which the cause of death reads "Gastric hemorrhage; gastric ulcer."

Also note similar discrepancies in Cases No. 11,801, 12,033, and in Table VII, Case No. 11,566.

(5) The establishment of a follow-up system to determine the results of treatment in the hospital with particular attention to the development of recurrences, on the one hand, and permanence of results, on the other.

Table IX illustrates a method which the author has been using since 1928. The case of the patient (marked with an asterisk) who died during the fifth year proved at autopsy to be an inflammatory condition.

We have records of 2 patients who were treated in 1925, 4 in 1926, and 4 in 1927, who were living without recurrence on December 31, 1932, a total of 10 patients in which the disease has been controlled for five years or more.

TABLE V—GASTRO-INTESTINAL TRACT

Case No.	Admitting diagnosis	Final diagnosis	Sex and age	Chief symptom	Duration	Operation	Histology	Result	
18,649	Intestinal obstruction	Carcinoma of the sigmoid	P 41	Impaction of feces	Indefinite	2 4 Colostomy	None	Discharged days PO.	33
19,510	Carcinoma (suspect)	Carcinoma of the pancreas	F. 45	Epigastric pain	4 months	9 11 Celiotomy no duode removed from omentum	Adenocarcinoma	Discharged 4 days PO. Died at home 86 days later	
19,836	Carcinoma of the stomach	Carcinoma of the stomach	P. 50	Loss of weight	2 years	None	None	Discharged 2 days after admission	
19,997	Carcinoma of the descending colon (suspect)	Carcinoma of the descending colon	P. 54	Melena	2 years	9 25 Mikulicz	None	Died 3 days PO.	
20,014	Carcinoma of the liver	Carcinoma of the liver	M 63	Pain and gastric distress	10 years	None	X-ray	Died 1 day after admission, no autopsy	
19,638	Pelvic inflammatory condition	Adenocarcinoma of the sigmoid	F 42	Abdominal and back pain	2 months	7 24 Enterostomy	Adenocarcinoma	Died 105 days after admission	
19,790	Postoperative adhesions	Malignant growth (probably carcinoma) of head of pancreas	M. 57	Abdominal pain and soreness, 51 days later re-admitted for vomiting. Lost 15 lb. weight in	1 year	8 17 Cholecystectomy, appendectomy 10 25 Celiotomy	Chronic Cholecystitis None	Discharged days PO. Discharged days PO. Died at home	16 13
20,186	Carcinoma of common bile duct	Carcinoma of the bile ducts	M 66	Jaundice	3 weeks	11 5 Exploration, hepatic duct opened and T-tube inserted, cholecystectomy and suture to wound	Carcinoma (PAH and Buffalo)	Discharged days PO. Remarkable operative recovery	14 Re-post re
19,826	Intestinal obstruction	Carcinoma of the sigmoid	F. 65	Melena and intestinal obstruction	10 days	8, 20 Colostomy	None	Discharged 10 days PO. Died at home 4 months later	10
19,153	Partial obstruction of Pylorus, probably carcinoma	Carcinoma of the stomach	F. 60	Constipation, abdominal distention loss of weight (38 lb in 4 months	Several years	None	None	In hospital 242 days	

CASE No. 11,949. Widow, aged 64 years. Admitted June 19, 1925.

*Admitting diagnosis:* Tumor, left breast.

*Final diagnosis:* Adenocarcinoma, breast.

*Family history:* Unsatisfactory.

*Previous history:* Pneumonia in 1923, five pregnancies, repair of cervix and perineum.

*Condition on admission:* Pain in left arm extending from axilla to fingertips since January. Three weeks ago discovered a lump in the left breast just to right of nipple. No history of injury.

*Examination:* Tumor in left breast to right of nipple.

*Urine examination:* Trace of albumin, pus.

*Operation:* June 19. Local anesthetic. Tumor 1 inch in diameter in upper right quadrant of left breast excised.

*Pathology:* Adenocarcinoma (No. 982, P.A.H.). Carcinoma (R. 205, Buffalo).

*Progress:* Uneventful.

*Discharged:* Convalescent 3 days PO.

*Readmitted:* Case No. 12,025, July 5, 1925.

*Operation:* July 6. Gas and oxygen anesthesia. Left breast, axillary contents, pectoralis major and minor muscles removed. No enlarged glands found in the axilla.

*Pathology:* No. 1007: Carcinoma.

*Progress:* Uneventful, except for nausea and vomiting. Three urine examinations; albumin in one, pus in all.

*Discharged:* Convalescent 12 days PO.

July 17, 1930: "Patient is alive and well and there is no recurrence."

CASE No. 11,950. Single woman, aged 30 years, an inspector. Admitted June 19, 1925.

*Admitting diagnosis:* Appendicitis.

*Final diagnosis:* Adenocarcinoma of colon.

*Family history:* Unsatisfactory.

*Previous history:* Unimportant.

*Condition on admission:* Seven days ago the patient began to complain of pain in the right lower abdominal quadrant, intermittent in character, and radiating across the lower half of the abdomen. There has been paroxysmal nausea but no vomiting. Anorexia has been a prominent symptom.

*Examination:* Abdominal wall rigid, tenderness in the right lower quadrant.

*Blood examination:* Leukocytes, 4,520; polymorphonuclear neutrophils, 51 per cent = 2,305;

lymphocytes, 48 per cent = 2,169; transitionals, 1 per cent.

*Urine examination:* Pus; otherwise negative.

*Operation:* At 11:20 day of admission. Gas anesthesia. Free fluid in the peritoneal cavity, ileum thickened, congested, and distended. Cecum thickened, congested, and distended. Mass 2½ inches in diameter in the hepatic flexure of the colon. Appendectomy. Resection of cecum, ascending colon, and 6 inches of the ileum. Ileocolostomy. Inspection of stomach, duodenum

TABLE VI

Case No.	Sex and Age	Duration of symptoms before seeking advice
<i>Bladder</i>		
11,253	F. 65	1 year
11,581	F. 69	2 years
12,324	M. 65	3 years
12,521	M. 74	1 year
12,750	F. 67	1 year
11,800	M. 60	1 month
<i>Breast</i>		
11,104	F. 58	3 months
11,254	F. 68	No record
11,388	F. 65	3 years
11,429	F. 76	2½ years
11,792	F. 42	2 years
11,812	F. 35	7 months
11,862	F. 50	2 years
11,905	F. 50	4 months
*11,949	F. 64	5 months (3 weeks?)
12,092	F. 66	7 months
12,362	F. 60	6 months
12,660	F. 48	2 years
11,891	F. 57	Some months
<i>Colon</i>		
11,576	F. 68	No note
*11,950	F. 30	7 days
<i>Liver</i>		
11,387	M. 63	8 weeks
<i>Ovary</i>		
12,485	F. 54	Hysterectomy 1914 3 weeks
<i>Prostate</i>		
11,995	M. 59	2 years
12,002	M. 63	6 months
<i>Rectum</i>		
11,232	M. 45	2 weeks
11,721	F. 68	1 year
12,139	F. 49	1 year
11,583	F. 57	4 months
<i>Skin</i>		
11,955	F. 68	1 month
<i>Uterus</i>		
11,296	F. 57	2 months
12,033	F. 72	2 years
<i>Vagina</i>		
11,441	F. 46	19 weeks
<i>Lung</i>		
12,466	M. 48	1 year

TABLE VII

Case No.	Clinical diagnosis	Pathological diagnosis	Diagnosis on death certificate	After discharge
11,581	Carcinoma, bladder	None	Carcinoma, bladder; anemia	2 years, 71 days
12,324	Carcinoma, bladder	Carcinoma	Acute pericarditis, acute nephritis	103 days
12,750	Carcinoma, bladder	None	Cerebral hemorrhage; arteriosclerosis; carcinoma, bladder	104 days
11,800	Ulcerative cystitis, urethral stricture	None	Carcinoma, bladder	109 days
11,254	Scirrhus carcinoma, breast	Scirrhus carcinoma	Metastatic carcinoma of lung secondary to breast	253 days
11,388	Glandular carcinoma, breast	Glandular carcinoma, axillary glands involved	Carcinoma, breast; general carcinomatosis	16 months
11,792	Carcinoma, breast	Carcinoma	Carcinoma, right breast and right hand	152 days
11,241	Gastric ulcer; this case surgeon reported developed cancer	None	Gastric hemorrhage, gastric ulcer	3 years, 6 months
11,387	Carcinoma, liver	None	Carcinoma, liver	58 days
11,801	Ovarian cyst, appendicitis	Multilocular ovarian cyst, acute appendicitis	Acute pleurisy with effusion; acute myocarditis and endocarditis	13 months
11,955	Epithelioma of vulva	Epithelioma	Epithelioma of vulva	187 days
11,296	Carcinoma of cervix	Carcinoma of cervix	Carcinoma of uterus	2 years
12,033	Carcinoma of cervix	Atrophy of uterus	Cerebral apoplexy; arteriosclerosis	1 year, 7 months
11,441	Uterine fibroids, epithelioma vaginal wall	Epithelioma	Carcinoma, uterus and vulva; starvation; acidosis; myocarditis	28 days



and pelvic organs revealed no disease.

**Pathology** No 1885 Culture from appendix negative after 24 hours No 983 Normal appendix Adenocarcinoma of the intestine

**Progress** Postoperative fever to 102°F, pulse to 120 Aside from nausea gas in stomach and intestines and nervousness, convalescence uneventful Some drainage from wound Began to menstruate on the 2nd day PO

Blood count on the 7th day PO Leukocytes 6920, polymorphonuclear neutrophils, 59 per cent = 4089, lymphocytes, 35 per cent = 2422, transitionals, 3 per cent, eosinophiles, 3 per cent

Culture of pus from wound showed a gram negative bacillus, morphologically like *B. coli*

Two urine examinations showed albumin in both, pus in both and blood corpuscles in one  
**Discharged** Convalescent July 16 27 days PO

July, 1930 Patient living and well Has been married and had a healthy baby after a normal labor

CASE No 15373 Married woman, age 59 years housewife Admitted April 4, 1927

**Admitting diagnosis** Carcinoma of the breast

**Final diagnosis** Carcinoma of the breast

**Family History** Unimportant

**Previous History** Unimportant

**Condition on Admission** Mass in the inner half of the left breast gradually retracting the overlying skin No pain or discomfort Nodular areas in the left breast Axillary lymph nodes enlarged Heart showed an occasional extra systole.

**Operation** April 5, 1927, radical mastectomy, anterior chain of axillary lymph nodes involved Anesthetic, nitrous oxide and ether

**Pathology** No 1982 Scirrhous carcinoma (P. A. H.), carcinoma of the breast (Buffalo)

**Progress** Uneventful convalescence Discharged from hospital 19 days after admission

(6) The activities of a Cancer Committee in a hospital may be expected to develop a spirit of cooperation and consultation between the clinician, the surgeon, the pathologist, and the radiologist in mapping out logical courses of treatment They will draw the attention of the entire staff to the fact that cancer is now the second most frequent cause of death As a result, physical examinations will be made in patients suffering from subacute and chronic diseases, with cancer in mind, just as heart disease is thought of and confirmed or excluded by the examiner at present The Committee's work will emphasize the facts that cancer occurs in patients in whom it is least expected, that the average cancer patient applies for treatment when metastasis has occurred and the disease is already incurable, and that consultations are desirable and necessary It is no reflection on the ability of a physician to ask for consultation, it is rather an indication of his care and good judgment Furthermore, the work of the Committee should result in improved methods of treatment, in the search for precancerous conditions, and in the increased value of the hospital records on account of the more exhaustive studies of the patients

TABLE VIII

Case No	Clinical diagnosis	Pathological diagnosis	Diagnosis on death certificate	After discharge
11 429	Adenocarcinoma left breast	Adenocarcinoma with hyaline degeneration	Carcinoma of breast (R) edema of lungs	14 days
11 438	Carcinoma of prostate	None	Carcinoma of prostate gland with extension	285 days
11 566		Chronic cervicitis	Cancer of liver	2 years
11 995		Carcinoma	Carcinoma of prostate	242 days
11 812		Adenocarcinoma	Carcinoma of liver and breast	323 days
12 200		None	Sarcoma of leg sciopoe	107 days
12 485	Adenocarcinoma ovary ovarian cyst	Adenocarcinoma tumor of vaginal wall not malignant	Abdominal cancer, primary seat right ovary	296 days
12 660	Carcinoma left breast	Carcinoma	Carcinoma metastatic from left breast involving liver gallbladder stomach, and lungs acute nephritis and marked icterus	2 years and 5 months

TABLE IX—CASES OF MALIGNANT TUMORS

	Total	Died	Per cent	Lost	Per cent	Living	Per cent
1st year 1928	31	12	38.7	0	0	19	61.3
2nd year	19	6	31.57	2	10.52	11	57.89
3rd year	11	1	9.09	0	0	10	90.91
4th year	10	0	0	1	10.0	9	90.00
5th year	9	1*	11.1	1	11.1	7	77.77
All five years	31	20	64.51	4	12.9	7	22.58
First year 1929	4*	21	50.0	0	0	21	50.0
2nd year	21	10	47.6	0	0	11	52.38
3rd year	11	2	18.18	0	0	9	81.81
4th year	9	1	11.11	0	0	8	88.88
All four years	42	34	80.95	0	0	8	19.04
1st year 1930	37	13	35.13	0	0	24	64.81
2nd year	24	5	20.83	0	0	19	79.16
3rd year	19	1	5.26	2	10.52	17	84.21
All three years	37	19	51.35	2	5.4	16	43.24
1st year 1931	26	13	50.0	0	0	13	50.0
2nd year	13	2	15.38	1	7.61	10	76.92
Both years	26	15	57.69	1	3.84	10	38.46
First year 1932	35	19	54.28	0	0	16	45.71

\* Diagnosis revised at autopsy

## THE ROENTGEN DIAGNOSIS OF LESIONS OF THE SMALL INTESTINES

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Lesions of the small bowel are manifested by evidence of partial or complete obstruction, by distortion of outline and interference with motility. Displacement is usually the result of an extrinsic process.

**TECHNIC.**—The small intestines may be studied with or without the aid of a contrast medium. When there is any clinical evidence of obstruction, whether partial or complete, a barium meal is contra-indicated under ordinary circumstances. In this event, the roentgen examination is made to obtain evidence of the obstruction, that is, to attempt to demonstrate dilated loops of, and fluid levels in, the intestine. To this end, exposures of the abdomen are made with the patient prone, supine, and erect (either standing or sitting, depending upon the patient's condition). It is sometimes not possible to have the patient even sit up; in this case, right and left lateral recumbent views give the desired information. The patient must not be prepared with any cathartic or enema.

When there is no clinical evidence of obstruction, a barium meal usually gives the most information. The technic of this procedure varies with the individual case. In general, the first examination should include observations 2, 4, 6, and 8 hours after taking the meal. It is sometimes desirable to repeat the examination, first to confirm the findings and second, to more carefully cover the time interval in which an abnormality is found. For a jejunal lesion, examinations at  $\frac{1}{2}$ , 1,  $1\frac{1}{2}$ , and 2 hours after ingestion may be necessary; in the presence of ileal stasis, examination at 2-hour intervals may be desirable. In other words, we do not intend to recommend a routine procedure. Each case should be individualized. Barium should reach the cecum four hours after ingestion. A delay to nine hours is suggestive, and a twenty-four-hour delay is definite evidence of an obstruction.

With the exception of lymphosarcoma, a subject which will require special discussion, practically all lesions of the small bowel result ultimately in stenosis, the sequelae of which are always partial or complete obstruction with dilation proximal to the stenosis.

The roentgen evidence of small-bowel obstruction is:

(1) The presence of dilated coils of small bowel (normally absent).

(2) The presence of fluid levels in the small bowel.

(3) Relative absence of gas in the colon.

There are all graduations in the dilatation of the small bowel depending on the degree of obstruction, its duration, and its cause, so that the appearance found may vary from an isolated loop of dilated bowel to the well-known "step-ladder" effect caused by dilated loops arranged one above the other, across the abdomen.

Further discussion of this phase of the subject will not be entered upon here.

In the absence of roentgen evidence of obstruction the administration of a contrast meal may be desirable. Since the roentgen appearance depends very largely on the individual lesion, a review of the more common lesions and the changes to be noted is now offered. Duodenal, gastrojejunal and jejunal ulcer, as well as duodenitis will not be included since they form separate chapters for study.

1. Obstruction due to mechanical causes.

- (a) Postoperative adhesions.
- (b) Gallstones, foreign body, ascaris infestation.
- (c) Spontaneous volvulus, intussusception.
- (d) Congenital bands and vessels, localized hernia into the fossa of Treitz.

2. Obstruction due to pressure from, or involvement in, an extrinsic process.

- (a) Hyperplastic glands.
- (b) Adhesion to extrinsic carcinoma.
- (c) Appendiceal abscess.

3. Herniae.

- (a) Inguinal and femoral.
- (b) Diaphragmatic.
- (c) Umbilical.

4. Intrinsic inflammatory lesions.

- (a) Tuberculosis.
- (b) Regional ileitis.
- (c) Meckel's diverticulitis.

5. Diverticula.

6. Tumors.

7. Fistulae.

8. Displacement by extra-intestinal lesions.

9. Miscellaneous.

Peritonitis.  
Peritoneal metastases.

Spasticity with no demonstrable organic lesion.

(1) OBSTRUCTION DUE TO MECHANICAL CAUSES is manifested in the manner described above, that is, by delayed motility and dilatation of the gut. The degree of distension proximal to the lesion will de-

pend upon the degree of the obstruction and duration of the lesion. An etiological diagnosis can be made only occasionally and then usually in conjunction with the clinical history. An exact localization of the obstruction is usually impossible. It is only possible to place it in the upper middle or lower small intestines. Exceptions are in the duodenum and terminal 6 inches of the ileum.

At this time, only the obstruction due to *postoperative adhesions* will be discussed. Ginzburg<sup>1</sup> notes that practically all postoperative acute obstructions due to bands or adhesions, occur in the small bowel. He asserts that "we can state unequivocally

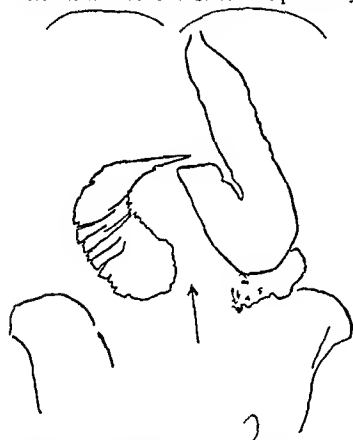


Fig 1—Almost complete obstruction of the ascending portion of the duodenum due to hyperplastic glands of unknown origin (operation)

that the roentgen ray frequently gave us more accurate information than the clinical signs."

As has already been noted, the site and degree of obstruction are determined, rather than the etiologic agent, so that *spontaneous volvulus, intussusception, congenital bands, obstruction resulting from an unusually free mesentery, a localized hernia of the fossa of Treitz*, such as occurs occasionally where the superior mesenteric artery crosses the flexura duodenojejunalis, are recognized by the presence of the obstruction.

The etiological diagnosis is merely a guess following upon determination of the site of the obstruction.

**2 OBSTRUCTION DUE TO PRESSURE FROM, OR INVOLVEMENT IN, AN EXTRINSIC PROCESS**—Three cases will be shown to illustrate this type. (1) Obstruction in the ascending portions of the duodenum due to *hyperplastic glands* (Fig 1), (2) obstruction in the ileum resulting from *adhesions to a carcinoma of the sigmoid*, with angulation of the small bowel, (3) involvement in a carcinoma of the head of the pancreas (Fig. 2).

Similar in type, for example, is the obstruction sometimes noted in the terminal ileum due to involvement in an *appendiceal abscess*. In the latter, where the obstruction is not complete, there can often be

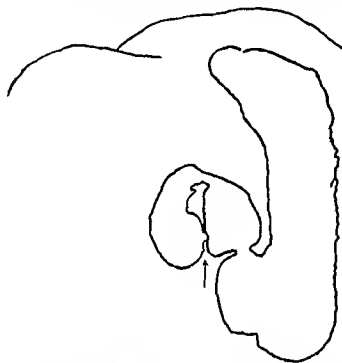


Fig 2—Partial obstruction of the ascending portion of the duodenum due to invasion by a pancreatic carcinoma (operation)

demonstrated a narrowing or spasm in the terminal 6 inches of the ileum with moderate dilatation proximal to it, and local tenderness. A similar finding has been noted in adhesion caused by inflammation or abscesses in the pelvic organs.

**3 HERNIAE** are fairly common lesions of the small bowel, often resulting in obstruction. Where obstruction is not present, the hernia may be directly demonstrated (Fig 3). Scrotal herniae containing loops of small intestine are often seen following a barium meal. Strangulated irreducible herniae show, of course, the findings of obstruction and differ only in their site (Fig 4).

**4 INTRINSIC INFLAMMATORY LESIONS**—It is possible for any lesion of the small intestines to cause obstruction. Often, however, some lesions can be diagnosed



Fig. 3.—Diaphragmatic hernia showing the small bowel occupying most of the left side of the chest. Stomach abdominal.



Fig. 4.—Small bowel obstruction due to incarcerating inguinal hernia. Note stepladder-like appearance of the small bowel. The colon has been filled by a barium enema.



Fig. 5.—Tuberculosis of the terminal ileum and caecum ascendens, proven by operation and abdominal section. Note the marked narrowing of the last inch of the terminal ileum with marked spasticity and irregularity of the caecum ascendens. There is no obstruction to the passage of barium through the diseased area.



Fig. 6.—Regional ileitis proven by operation and pathological section. The terminal 8 inches of the ileum is cord-like in appearance, considerably narrowed and irregular. At one point there is a small pocket which would suggest beginning perforation. Proximal to this is seen a second narrowed region about 2 inches in length, the site of a similar diseased process.

before obstruction occurs, or an etiological diagnosis can be suggested. This group will now be discussed.

**Tuberculosis**—Tuberculous ulceration of the small bowel usually results in a spasm or irritability. Ordinarily, however, this is not the feature which is noted on the roentgenogram. The spasm usually causes a temporary obstruction, and it is the dilatation of the bowel proximal to this which is seen. The longer the delay in motility the more likely it is that a lesion is present. Ileal stasis at seven to eight hours after ingestion without barium in the large bowel, and with irregularity in the contour of the terminal ileum is suggestive evidence of the presence of ulceration in the ileum.

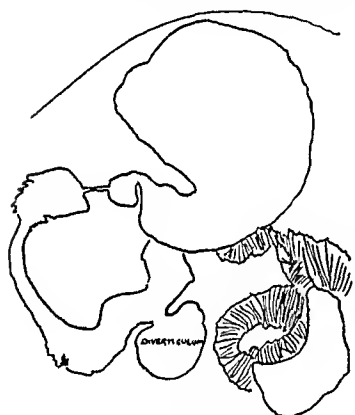


Fig 7—Diverticulum of the ascending portion of the duodenum

or at the ileocecal valve, especially in the presence of clinical evidence. If the cecum and ascendens are also involved, the spasm and irritability are seen in this part of the bowel. The persistent irregular filling or lack of filling of the cecum and ascendens and of the terminal ileum, with stasis and moderate dilatation proximally, are very suggestive of tuberculosis (Fig 5).

**Regional ileitis**, so masterly described by Crohn, Ginzburg, and Oppenheimer<sup>2</sup>, is a disease of the terminal ileum, and is characterized by a subacute or chronic necrotizing inflammation. It involves usually the terminal 8 inches of the ileum. The lumen of the intestine is considerably narrowed and usually leads to stenosis, associated with chronic perforation and multiple

fistulae to the colon, to another coil of small intestine, or to the abdominal wall. Roentgenologically, the affected ileum is seen as a narrowed irregular streak of barium. There may be pockets suggesting ulceration and evidence of fistulous formation. The colon is not affected except by some such fistulous connection. In the 2 cases that we have seen we did not observe dilated loops proximal to the constriction nor was there a definite delay in this portion of the intestine at the six hour observation (Fig 6).

**Inflammation of Meckel's Diverticulum**—This condition is manifested roentgenologically only by the obstruction it produces. The clinical data are, however, of much



Fig 8—Adenocarcinoma of the distal ileum. Note irregular filling defect with partial obstruction.

more importance in the diagnosis. Soper<sup>3</sup>, for example, illustrates such a case where there was partial obstruction of the lower ileum. At the six hour examination, there was dilatation and sacculization proximal to the lesion. This was also noted twenty-four hours after ingestion of the barium meal.

**5 DIVERTICULA**—Diverticula have been noted, in our experience, in all parts of the small intestines, duodenum, jejunum, and ileum. They appear as outpocketings from the lumen of the bowel which often remain filled when the portion of the bowel from which they arise has emptied. The diverticula may be single or multiple and are usually congenital. Occasionally they may be traction diverticula, due to extrinsic processes (Fig 7).

6. TUMORS.—It is not the purpose of the present discussion to become involved in any pathologic considerations of the tumors occurring in the small bowel. Suffice it to say that tumors of the lymphoblastoma group are most common, and the majority of these occur in the ileum. Carcinomas are next in frequency, appearing most often in the duodenum and about equally in jejunum and ileum. Adenomas are third. Other benign tumors include carcinoids, lipomas, fibromas and accessory pancreatic tissue. Two features are to be emphasized: first, the location of the tumors, and, second, their characteristics.

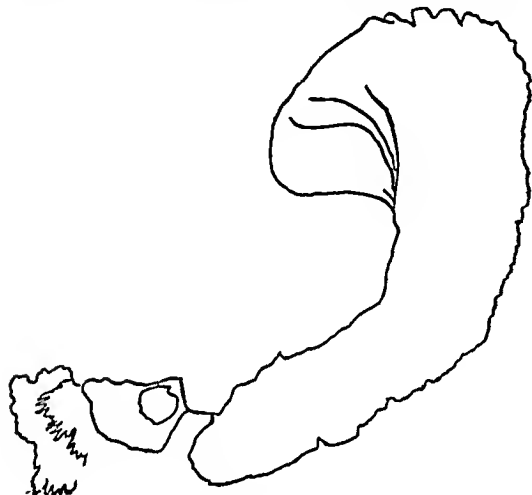


Fig. 9.—Duodenal polyp. Note smooth round filling defect in duodenal bulb. This was movable fluoroscopically.

The terminal ileum is attacked much more frequently by both benign and malignant tumors, the duodenum is next in frequency, and the jejunum is relatively free (Fig. 8). Malignant tumors are larger and usually single. Benign growths are smaller, often multiple and usually polypoid.

The small intestine is not an uncommon site for metastases from primary malignancies elsewhere in the body. The most common primary sites are stomach, pancreas and uterus. The metastases usually are found in either duodenum or ileum. Metastases to the jejunum are rare.

A special consideration should be given to lymphosarcoma of the small intestines, localized or as part of a general process. Since lymphosarcoma has no fibroblastic tendencies, the growth has no tendency to constriction. On the contrary, there is a tendency to sacculation. In Hodgkin's disease and leukemia, stenosis may, or may not, occur depending upon the amount of fibrous tissue reaction that is present. Ass-

mann<sup>4</sup> also calls attention to these findings. He notes that lymphosarcoma does not produce stenosis but does produce a stiffness of the walls of the bowel with ulceration which may actually result in aneurysm-like sacculations. He states that roentgenologically the small bowel appears as smooth loops at the affected site. The valvulae connivents are absent and the loop may remain filled for a long period, after the rest of the small bowel is empty. The stasis is due to infiltration of the peritoneum; consequently the loop is fixed and may remain filled for twenty-four hours.

The roentgen diagnosis of tumors of the



Fig. 10.—Fistula between jejunum and gallbladder presumably due to perforating gallstone. Gallbladder found thickened and contracted at operation, containing several small calculi.

small intestines depends upon the deformity of outline or obstruction they produce. The obstruction may either be produced by an intussusception or by encroachment upon the lumen by the growth.

Intussusception is more apt to be associated with benign tumor and spontaneous reduction is not common because these tumors are pedunculated.

Filling defects are rarely demonstrated except possibly in the terminal 6 inches of the ileum or in the region of the ileocecal valve where the ileum is more or less mobilized.

Tumors of the duodenum may be benign or malignant. Benign polyps are usually noted as filling defects in the duodenal bulb, usually smooth in outline and mov-

able (Fig. 9). Occasionally such an apparent duodenal polyp may be really a gastric polyp prolapsing through the pylorus. Malignant tumors usually produce an irregularity which, when it occurs in the bulb is indistinguishable roentgenologically from duodenal ulcer. Such a deformity has also been noted in invasion of the bulb by pancreatic carcinoma. Carcinomas of the second portion of the duodenum, carcinoma of the ampulla of Vater, and of the third portion, manifest themselves, if at all, by obstruction. In the former the diagnosis is made clinically much earlier than any definite abnormality is demonstrated in the roentgen studies.

**7. FISTULAE**—Fistulae are commonly noted between the duodenum and the gallbladder or other part of the biliary system (Fig. 10), between two parts of the small intestine, or between the small and large bowels. Fistulae between biliary and intestinal systems are presumably usually due to passing or passed biliary calculi, less commonly to tumors of the gallbladder involving the duodenum.

Fistulae between parts of the small bowel are usually postoperative and more rarely due to tumor. Those due to terminal ileitis have already been described. Enterocolic fistulae are most often associated with malignant tumors of the large bowel. The fistulae are usually shown during the course of the barium enema, but may be shown after a barium meal. The presence of barium-filled jejunum or duodenum during such an enema, particularly in the presence of a colonic lesion, indicates a fistula (Fig. 11).

**8. DISPLACEMENT BY EXTRA-INTESTINAL LESIONS**—Practically any mass reaching a sufficiently large size and close enough to the intestine, will manifest its presence by displacement of the intestines. A cyst in the head of the pancreas will often widen the duodenal curve. Displacements due to retroperitoneal masses, mesenteric and ovarian cysts and hydrosalpinx will depend upon the location of the mass. A full urinary bladder usually lifts the ileum out of the pelvis.

**9. MISCELLANEOUS.**—**Peritonitis**, whether of tuberculous or other origin, is usually manifested by an irregular paralytic ileus, so that there are seen irregularly distributed dilatations and constrictions of the small bowel. These findings we have also noted in the presence of carcinomatous

peritoneal metastases. It is in these conditions that bizarre distributions of barium in the small bowel are to be noted. The changes in tuberculosis may be due to actual peritoneal irritation, to peritoneal glands or to adhesions. These latter may occasionally produce a localized stenosis.

#### SUMMARY

There have been reviewed the various changes demonstrable roentgenologically in the more common lesions of the small intestines. This review has excluded duodenal ulcer and duodenitis, as well as certain postoperative states and complications such as gastrojejunal ulcer, ileostomy,



Fig. 11—Jejuno-colic fistula secondary to carcinoma of the sigmoid infiltrating the jejunum. Barium injected by rectum passed directly into the jejunum from the sigmoid.

etc., as forming separate material for study. It is the author's experience that roentgen study often offers the only reliable diagnostic aid in the study of small bowel lesions. Careful technic along with experienced interpretation of the fluoroscopic observations and of the roentgenograms in conjunction with the clinical findings, lead far toward a correct diagnosis.

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## PITRESSIN TEST IN EPILEPSY

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*Buffalo*

It is estimated that there are in the United States a half million persons subject to epilepsy. The large size of this group of afflicted individuals has stimulated a tremendous amount of research—as evidenced by the fact that the *Index Medicus* contains the titles of over 4,000 articles and books on the subject published since 1900. Notwithstanding the great amount of investigation our advance in knowledge has not been startling. We do not yet know what causes epileptic seizures.

(hyperpnea), low blood calcium, low blood sugar, increased intracranial pressure, impaired intracranial circulation, increased intracranial water content.

One of the most promising fields for investigation in the light of recent findings is that of water balance. That there is some significant relationship between water balance of the body and the occurrence of epileptic seizures has been demonstrated by the clinical observations of Temple Fay and others and by the experimental studies

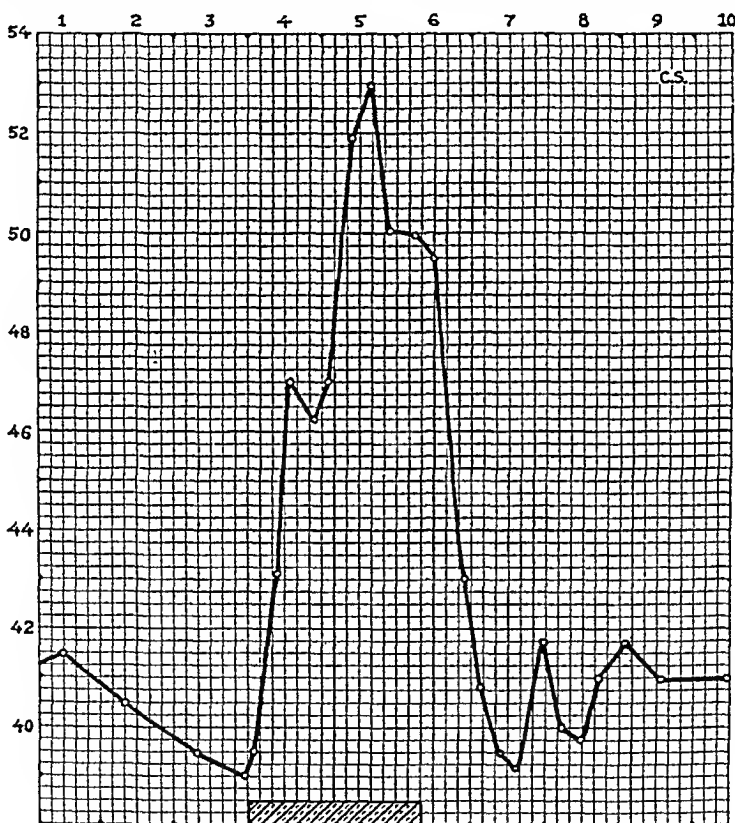


Chart I.—Weight chart of hysterical child, showing 13-lb weight gain when pitressin was given. There were no symptoms produced.

Within the last few years, however, we have learned a good deal about the physiological changes in the brain which may tend to increase or to decrease the number of seizures. For example, we know that the following changes will tend to produce convulsions in susceptible individuals: Poor oxygen supply to the brain, alkalosis produced by means of ingestion of alkalis or by blowing off carbon dioxide

of McQuarrie and of Gamble and Hamilton. There are other reasons for believing that water balance is important.

(1) Hippocrates noticed that the brains of epileptics were unusually moist.

All brain surgeons have noticed this excess fluid.

(2) Encephalograms show fluid in much greater amounts in the sulci and ventricles of epileptics.



(3) In status epilepticus removal of spinal fluid results in prompt recovery.

(4) Dogs can be thrown into convulsions within 4 to 8 hours after introducing water by stomach tube. The brains of these animals are found to be water-logged.

(5) The frequency and amount of urine is considerably increased during periods of

the basis of a test for epilepsy. Frequently children come under observation with a history of "spells," "fainting attacks," "weak spells," "shaking spells," "nervous fits," etc. They may be breath-holding attacks, thymus attacks, or hysterical attacks in a so-called behavior problem child. In the past, after months of inconclusive

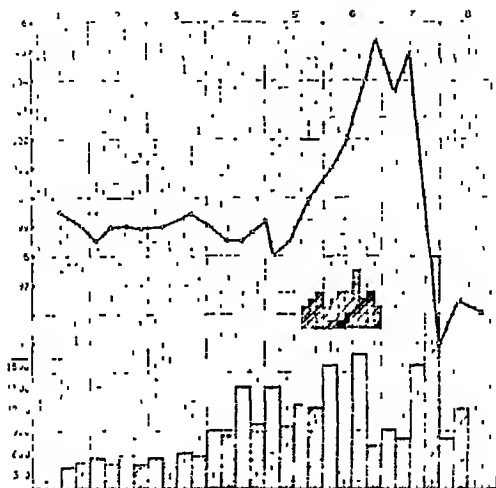


Chart II—Weight chart of non-epileptic child, showing gain in weight when pitressin was given, followed by prompt loss when it was discontinued. Below is intake (clear columns) and output (shaded columns) of urine for each 12 hour period. Note marked diuresis when pitressin was discontinued.

convulsions as contrasted with the non-convulsive stage of the disease.

(6) Fay notes the case of a patient suffering from neurasthenia who was given a glass of milk every hour of the day. At the end of the second week convulsions occurred for the first time in the patient's history. A second series of forced fluid was followed by a similar result.

(7) Three measures often effective in reducing the number of epileptic attacks, namely fasting, ketogenic diet, and administration of large doses of acid-forming salts have in common one action—dehydration of the body.

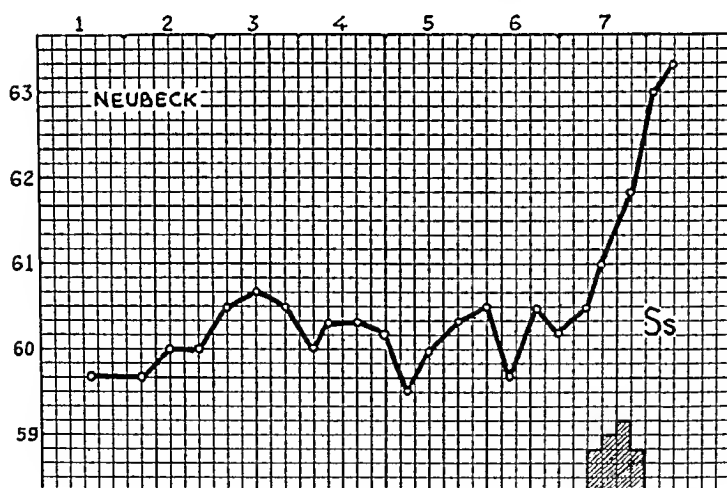
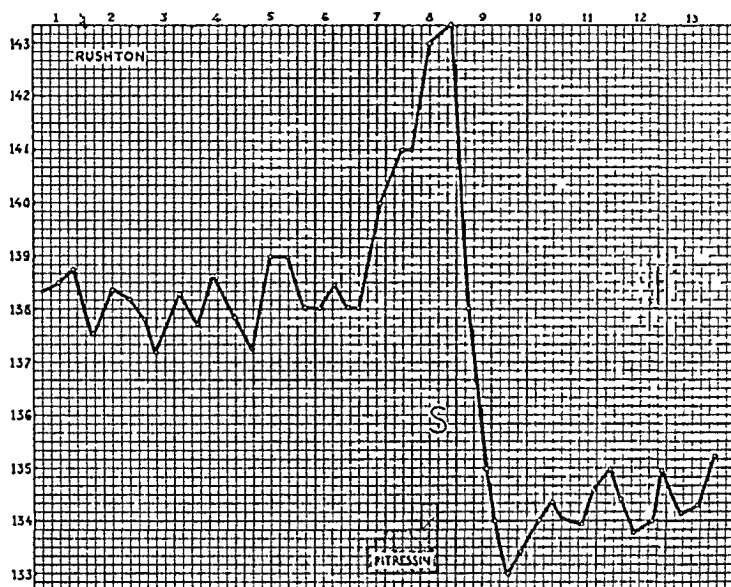
Thus we are led to conclude that retention of fluid in the body tends to induce seizures and this fact has been used as

office visits we have usually in the end been constrained to admit such cases into the hospital only to have week after week pass without seeing a single attack. And when the child was finally sent home the parents would soon be back reporting daily spells as before. It is a well-recognized fact that change of environment may cause any of these attacks, including the epileptic seizures, temporarily to disappear. Thus we were in a dilemma, since the treatment is very different according to the diagnosis we make.

By means of the pitressin test we can cause such a child promptly to have a typical seizure provided that it is a case of epilepsy. The procedure is to give fluids to the point of establishing a positive water

balance and when water has been retained to the extent of causing an increase of body weight of 3 to 6 per cent or more, a convulsion will result. Under ordinary conditions output will keep pace with intake and no retention will result. But by making use of the antidiuretic effect of

normal individual nor in the epileptic. Only when fluids are given in sufficient quantity along with it do we precipitate an attack. Proof of this was furnished by a mistake by which a nurse gave 10 times the prescribed dose to an epileptic patient and no convulsion resulted. Later, however,



Charts III and IV.—Weight charts of epileptic children showing occurrence of seizures (S) at the height of the weight gain.

pitressin a positive water balance is readily induced.

Pitressin is a fraction of pituitrin which lacks power of stimulating smooth muscle, but which contains the antidiuretic principle, the element useful in treating diabetes insipidus. In itself pitressin cannot produce a convulsion, neither in the

when the smaller doses were given to this patient, along with extra fluid to be retained, a seizure occurred (McQuarrie and Peeler).

The practical application of the test consists in giving 300 c.c. of water every two hours and an injection of pitressin every four hours, until a positive water

balance is established. The body weight is the best indication of this. The dose is 0.2, 0.3, 0.4 c.c., and thereafter  $\frac{1}{2}$  c.c. doses until a seizure occurs or until about 8 or 10 doses have been given. If a seizure occurs, no nourishment or fluids are to be given except 1 c.c. of cream per pound of body weight every four hours. This seems to be the most effective way to eliminate further seizures.

Charts I to V are typical of the reactions to this test, although usually the weight gain is not as large as in the case which is shown in Chart I. There seem to be no bad effects whatever and the children are comfortable throughout the duration of the test. There has never been any difficulty in inducing the children to take the necessary amount of fluids. In the occasional child who reacts to pitressin

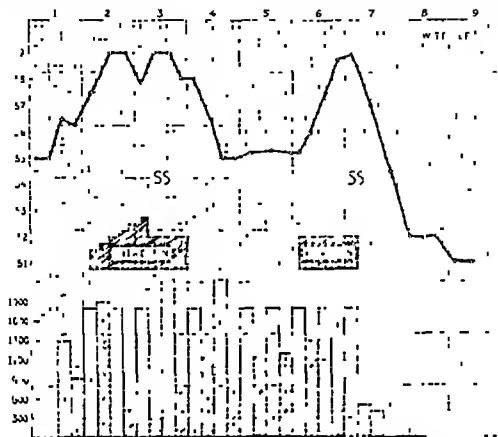


Chart V—Weight chart of epileptic child showing water retention during periods when pitressin was given and occurrence of seizures (S) on two occasions when approximately 4 lb. of water had been retained, as indicated by a 4 lb. gain in weight.

We used the test in about 40 cases and thus far have found it reliable. The only cases where it was of no help were those few in which no positive water balance could be established, even with pitressin, and therefore the negative results could not rule out epilepsy; furthermore, two children became nauseated so that the test had to be discontinued.

with headache, vomiting, or abdominal pain, we simply discontinue the test.

The author should like to emphasize the fact that it is unnecessary to perform this test in individuals whose attacks the physician is able to observe and which can be recognized as typically epileptic in nature. But in the large number of cases where the type of "spell" is indeterminate, this test proves a valuable aid to diagnosis.

#### ANNOUNCEMENT

The Gynecean Hospital Institute of Gynecologic Research of the University of Pennsylvania, is conducting an intensive study of families into which congenitally malformed individuals have been born.

Special interest centers in families in which malformations have appeared in two or more

children. Physicians who have knowledge of any such families are urged to communicate with

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Philadelphia, Pa.

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## EDITORIALS

### Lessons of a Great Career

It was no accident or happy stroke of luck, no "influence," no pull, no genius for self-advertisement, that lifted William Henry Welch to the lofty place he held in American medicine when his splendid career closed in Baltimore on April 30th. A study of his record reveals, woven all through it in warp and woof, the golden threads of conscientious, painstaking work, the unremitting study that goes to the very roots of the matter, and never gives up until the whole truth is discovered.

To take one example, after graduating from Yale in 1870 at the age of 20, and after teaching Latin and Greek for a year, he entered the College of Physicians and Surgeons in New York. Most students of that day would consider a four-year course at Yale more than sufficient preparation. Not so young Welch. He decided that he needed further training in chemistry and returned to New Haven for a year of work in the Sheffield Scientific School. Then he came back and completed his medical course.

No doubt, most of his classmates considered themselves educated, and proceeded to the practice of medicine. But this young man felt that he was only at the beginning

of medical knowledge. He sailed for Europe, and found pathology just established and bacteriology beginning. He studied at Strasbourg, at Leipzig, at Breslau, at Vienna, at Paris, at London. It was no wonder that when he began his practice in New York he was invited to lecture in pathology at the College of Physicians and Surgeons and to undertake research at the Bellevue Hospital Medical College. When the Johns Hopkins Medical School was established in 1884, he was called to the chair of pathology, and it was said that one of his eminent European teachers recommended the appointment. It was characteristic that his new post gave him a feeling of insufficiency, and he went to Europe for another year of study.

Never enough. He must always be reaching out for more and more knowledge. The result was that he became a center and fount of inspiration for others. Students who associated with him achieved great fame. His work centered at Johns Hopkins but radiated everywhere. He helped mightily to raise the standards of American medical education, to stimulate the advance of research, hospital organization, public health work. To enumerate his degrees is to call the roll of the leading universities of the country. He was elected president of national medical and scientific bodies too numerous to list here. He was an honorary member of the distinguished medical and health organizations all over the world and was decorated by the governments of many foreign lands. His eightieth birthday, in 1930, was the occasion of a world-wide celebration such as few men in any walk of life have ever enjoyed.

It is worth remarking, too, that amid all this blaze of distinction and fanfare of acclaim, William Henry Welch kept his fine geniality, his warm clasp of the hand, his merry twinkle of the eye. He did not cultivate the icy aloofness of manner that some seem to think necessary to dignity. He was just a fellow man working with all the rest of us in the pursuit of truth. He never felt that his education was complete. He was still the student, to the very end. His life was rich with lessons for all of us.

## Aviation Medicine

The rapid growth of flying makes it desirable for physicians to know something of the physical, neurological, mental, and personal qualities that are demanded of a pilot before he is permitted to risk his own and other people's lives sailing the blue. The popular lay idea is that if a pilot has good eyesight and a sense of balance, he is competent to fly a plane, but every doctor knows, of course, that any such assumption is so totally inadequate as to be almost ludicrous.

The pilot "has only God and himself to depend upon while in the skies," remarks Dr. Ralph Greene, of Jacksonville, Florida, who has had 22 years of experience in observing fliers and of flying association with some of the world's greatest airplane pilots. He has seen the tragic history of aviation turned, page by page, almost from the beginning, and has seen the majority of the pilots he has known end their careers in fatal crashes. He wishes every amateur flyer could have a placard always before his eyes warning him that "While airplanes may be fool-proof, they are not damned-fool-proof." There are old pilots, he adds, and there have been bold pilots; but there are no old and bold pilots, for the bold ones have been killed. Among the 500 scheduled air-line pilots of this country, he informs us, many of whom are engaged in night-flying, there has been for a period of five and a half years a death of one of their members at the controls of an airplane every twenty-nine and a half days.

These tragic figures show that the ill-fated pilots often may have had some defects that were not found even by the exhaustive tests of the medical examiners—some slight failure of eye, hand, heart, brain, or spirit that was enough at a speed of 200 miles an hour to tip the delicate scale of life and death. So the examiner feels that he must delve deeper and deeper into the make-up of the fine young fellow before him if he is to save him from an untimely end.

Dr. Greene's informing paper appears in the *Journal of the Florida Medical Association*, and he begins by telling us the commoner physical defects the examiner

must watch for in the would-be pilot. The candidate should be in good general health, of course, and his heart and lungs should pass the tests with flying colors. The skull and spine must have no serious defects or irregularities. The entire system should be free from diseased conditions or defects due to previous illness. The eyes, too, must meet all kinds of tests, which we will not catalogue. Private flyers are permitted to fly with correcting lenses for imperfect vision, but not commercial pilots. It is interesting to note that in his experience of many years in examining aviators Dr. Greene has found a fair number of men who were color-blind, but never a woman.

The sense of equilibrium is something every pilot must possess, yet this very sense may lead him into a fatal crash if he trusts it too implicitly. If he is seated in a revolving chair and is turned to the right with his eyes closed, and the chair is stopped, he then feels that he is turning to the left. So if he is flying blind and his plane goes into a right-hand spin, and he brings it out of the spin and into a straight-away course, he then feels as if it were in a left-hand spin, and in trying to correct it he throws it again into a right-hand spin and may end in a crash. The wise pilot, however, knows all about this, and depends on his instruments, no matter what his senses seem to tell him.

The pilot's nervous system must be ready to respond to every call and to resist every attack, and the examiner is here faced with an important and delicate task. He must watch keenly for any signs of emotional instability, which might be fatal in a critical split second. The examiner must be a neurologist as well as a doctor, and our authority here remarks that he finds that physicians and surgeons are beginning to realize that a practical working knowledge of neurology is a valuable asset to other medical and surgical efforts. The neurological examination begins as the applicant walks into the room. The way he walks, the way he stands, the way his arms swing, or do not swing, the expression of his face, all tell their story, and may reveal organic disease of the central nervous system before a word is spoken. A large

brain tumor may be present in the "silent areas" of the brain for many years without showing a single symptom, except, perhaps, absent-mindedness. The victim may light a match and then forget it till he burns his fingers, or hold a spoonful of ice-cream in his hand till it melts. These warnings go unheeded. Finally the tumor causes a violent generalized convulsive seizure in an otherwise seemingly healthy individual. It is easy to see the importance of a situation of this kind in a pilot with a dozen passengers entrusted to his skill. This is just one of the many things the examiner must watch for. Air ventriculography is invaluable in a test of this sort.

Equally important is the personality study, to size up the candidate's nervous system in relation to temperament, intelligence, and volition. His family history must be gone into, his personal history, his environment, his play life, his sex life, his education, everything, in fact, that will throw light on his disposition and personality. Even his mental attitude toward the examiner and his prying questions may be illuminating. The examiner is not so much interested in what the pilot knows as he is in the scope and play of the intellectual activities, the receptivity, the acquisitiveness, the retentiveness, how experience is rationalized, and how constructively it has been used. This searching examination sometimes reveals strange things. Many individuals are found to shade off below the lower range limit of what we term normal into the neurasthenoid, the hysteroid, and the psychasthenic without any previous recognition of it, because favored by circumstances or undiagnosed.

All this detailed probing aims to measure the degree of the candidate's nervous stability, to find how his emotional system will stand up in the moment of supreme test when his life depends on it, and our authority quotes Dr. R. F. Longacre, a distinguished medical expert of aviation, as saying that "a moment of time must serve in emergency at speeds upward of two hundred miles per hour in an unstable medium, with fatality as the penalty of error or delay."

When we trust our lives to the steady-eyed young pilot in his natty uniform and

nonchalant air, as if he has not a care in the world, it is reassuring to know that he has gone through this searching test, reaching into every nook and cranny of his being, and that he has come through it with a clean bill of physical, mental, nervous, and spiritual health. If similar tests were applied to automobile drivers, it is fairly safe to say that we would not have our present death roll of 30,000 fatalities a year.

### Spending \$3,848 to Find One Disease Carrier

Is that amount too much? Is this an example of the high cost of government that is piling our taxes mountain-high and making us all work like slaves to support an army of job holders? Well, let us see. This rather expensive disease carrier was located in 1929, it appears, by the Connecticut State Department of Health in its examinations of the food handlers, and was the only one detected that year. That was what made his cost so high. In 1931, 27 carriers were found, at a cost of \$387 each, which was cheaper, but we would probably prefer one at \$3,848 to 27 at \$387 each. It would indicate a better state of affairs in the handling of our food supply.

Our grandfathers did not have to pay any taxes that were spent for the detection of disease carriers who were handling their food. They merely had diphtheria, scarlet fever, septic sore throat, tuberculosis, typhoid and paratyphoid, etc., without inquiring very closely where they came from. Now we exercise a little more curiosity about it and, of course, curiosity costs money. But we figure that it is worth what it costs, and often much more besides. A survey in Massachusetts listed 21 milk handlers who were typhoid carriers and who had caused 426 cases, or an average of 20.3 cases each. That money was certainly well spent.

An instructive presentation of the cost of detecting disease carriers, as contrasted with the cost of not detecting them, is given by several experts of the Connecticut Department of Health in a paper read before the American Public Health Association. In Connecticut, it seems, the handlers of certified, Grade-A raw and

pasteurized milk are subjected to periodical health examinations, while the handlers of ungraded raw milk are not. The ungraded raw milk forms 42.2 per cent of the total supply so that that percentage is unprotected from disease carriers. If we say that the unguarded 42.2 per cent is consumed by 42.2 per cent of the State's population, and the protected 57.8 per cent is consumed by 57.8 per cent of the population, which seems a reasonable way to reckon it, then 708,389 Connecticut consumers are unprotected, and 970,258 are protected, by the inspection of the milk handlers. If the State is undertaking at all to protect its people from disease carriers, it hardly seems logical to leave 700,000 of them in peril of the dangers from which the rest are guarded.

The cost, too, is little enough when we come to figure it out on a per capita basis. The total cost of this service for last year was not over \$20,000. Distributing this among the 970,258 persons who were protected by it, it comes to less than 2 cents a year for each consumer, certainly not an extravagant figure. Or if we reckon it on the basis of the quantity of milk safeguarded, it is less than 12 cents for each 1,000 quarts.

Has the inspection actually proved itself to be worth the cost? The answer to that is that no outbreaks of milk-borne diseases have occurred among users of the certified, Grade-A raw or pasteurized milk since the inception of milk handler control. On the other hand, there have been seven such outbreaks attributed to the unguarded raw milk during the 77 months covered by this study: 4 of scarlet fever and septic sore throat, 2 of typhoid fever, and 1 of paratyphoid fever. The outbreaks of scarlet fever and septic sore throat involved 328 cases, with 5 deaths, and the outbreaks of typhoid and paratyphoid fever involved 55 cases, with two deaths. Taking 3 weeks as the average time of illness for the first group and 8 weeks for the second, we have the amazing total of 1,424 weeks, or over 27 years, during which persons were forced to remain away from business, school, or home duties because of illness due to milk infected by carriers. Add to this the cost of medical care for the 383 patients, the

economic loss of 7 lives, and the cost of 7 funerals, and ask if it does not far outweigh what it would have cost to guard the milk supply which caused all this waste and wreckage.

While our costs of government are piling and pyramiding higher and higher, let us stop and examine some of our expenditures and see if it would not pay in cold cash to transfer part of them from useless frills and fol-de-rôls to work like this that makes us a stronger and healthier people.

### As the Twig Is Bent

So, we are assured by the old saying, the tree's inclined. And on that principle the County Medical Society and the County Parent-Teacher Association of Westchester County are planning to bend the little twigs of New Rochelle in the direction of good health, in the hope that they will stay inclined that way when they grow older. For the idea behind this particular movement is that it shall not be just another child-health effort, but shall be the start of a continuous life-long health program, to be carried on as completely as possible under the guidance of the family physician acting as health counsellor.

It is to begin with a health examination of all children between the ages of two and five, but here again we have a new feature, for they are to be divided into three classes. First, all the mothers who can afford to do so are to be urged to take the children to their family physicians for examination in their private offices. Next, for those who cannot afford this, special pay clinics will be provided, at a fee of \$2.00, conducted in their own offices by physicians specially selected by the local Medical Society. Finally, the children of the indigent will be examined at the free clinics of the Baby Welfare Stations, largely by the same doctors who conduct the pay clinics. All three classes of examinations will be thorough and painstaking, but the first class will include procedures which cannot be given in a free or \$2.00 examination. All examinations will include a tuberculin test, if the parent will consent, a feature suggested by the Westchester Tuberculosis and Public Health Association.

If this plan is successful in New Rochelle, it will be recommended for adoption in the rest of Westchester County. It may well be watched by other counties, also, and emulated if it works out satisfactorily. The pre-school examination idea has become very popular throughout the country. Parent-teacher associations are strongly in favor of it. Too often, however, the children have been simply rounded up en masse and examined wholesale at special free clinics. As a result, the examinations have often been more or less sketchy, and the parents have been habituated to the idea that medical care is free. The Westchester plan is more far-seeing. It starts the little feet on a highway of health that will lead to a longer and stronger life, and teaches the family that real health service is worth saving for and paying for, and is worth all it costs in the end. It is a lesson the whole country needs to learn.

### The "Team Doctor"

He will not make a fortune out of it, but he will have the time of his life, he will form lasting friendships with as fine a lot of young fellows as ever breathed, and he will save some of them from injuries that might mar their future usefulness and happiness. He probably is himself a former school or college athlete; he has felt the snap of a bone when the opposing team piled on top of him; he knows the agony that follows a kick in the stomach; he knows the danger of violent exercise when a lung or kidney has a tender spot or when the heart has a disturbing murmur or flutter. At the same time he wants his boys to win, and when Bill gets his wind after that kick below the belt he pats him on the back, sends him into the line again, and whispers to him to break through for a touchdown. At another time he has the courage to defy the coach and antagonize half the school or college by ruling out of the game a star performer who has a physical defect that will not stand the strain of rough play. In short, he must have the qualities that would spell success in any walk of life, yet accept the lean pay of the "team doctor." Impossible? Perhaps, but lots of fine men are doing it.

It is only in the last three or four decades

that the team doctor has come into the picture. Before that the coach used to dress cuts, bind up sprains, and even set broken bones. Mr. Parke Davis, it appears, used to be a coach, and tells of performing such services. "In my day," he says in a recent letter, "we coaches were also team physicians and surgeons." The athletes took their injuries as part of the game, and it was thought infantile to make any complaint, so nobody thought of asking for an attending physician to follow the team about.

The change to the better methods came with perfect naturalness, as Dr. Joseph E. Raycroft of Princeton University relates in an address before the American Student Health Association. Among the men graduated from medical schools in the '90's were some who had played on the teams in their school and college days. They saw the need, volunteered to look after the health of their old school teams in addition to their private practice, and led the movement to have regular team doctors provided. They also brought a fresh point of view. In previous years the aim had been only to make the athletes stronger and to develop their muscle. The new idea is to develop their health, too, and guard against disabling injuries. The skillful team physician can not only bind up an injury after it occurs, but he can devise special protective and preventive strapping, bandaging, and padding that will keep the injury from happening at all. With his own experience as an athlete he can tell his team members how to handle themselves to avoid injury in the rough-and-tumble of the game.

Much remains to be done in this field. True, the leading colleges and private schools have their team doctors, but very few of the thousands of high schools have anything of the sort. Yet the life and health of a high-school boy is just as valuable to himself, his parents, and the community as those of a college boy. When the list of football fatalities is published every year, the school teams supply most of the names, and the reason for it is that they have little or no expert supervision. It is greatly needed, and the local physicians have a door of opportunity standing open before them here to help the young chaps who will be our men of tomorrow.



# Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

## Patient and Physician—Waiver of Privileged Communication

As has been stated from time to time in these columns, the law of this State forbids a physician from revealing information concerning his patients which he obtained in attending them in a professional capacity. This has been the general rule ever since the Legislature over a hundred years ago enacted a statute covering the subject. The law has been continuously in effect ever since, and at present is incorporated into the Civil Practice Act, as follows:

"Sec. 352. *Physicians and Nurses Not to Disclose Professional Information.* A person duly authorized to practice physic or surgery, or a professional or registered nurse, shall not be allowed to disclose any information which he acquired in attending a patient in a professional capacity, and which was necessary to enable him to act in that capacity, unless, where the patient is a child under the age of sixteen, the information so acquired indicates that the patient has been the victim or subject of a crime, in which case the physician or nurses may be required to testify fully in relation thereto upon any examination, trial or other proceeding in which the commission of such crime is a subject of inquiry."

From time to time the Courts have established exceptions to the rigor of the said rule. For example, it has been established that in a malpractice action the patient is not entitled to invoke the rule to prevent the defendant doctor from calling witnesses to testify as to the physical condition of the patient. Very recently the Court of Appeals made an important decision in which it determined that under certain other circumstances a patient was not entitled to invoke the rule.

In the years 1928 and 1929, a certain J. made four written applications for life insurance policies. Before the policies were issued he was examined by the company's doctor. Certain questions were asked of him in the course of the examination and his signed answers thereto were attached to and made part of the policies that were issued. Included in the questions put to him and the answers which he gave were the following:

"Have you ever consulted a physician or practitioner for or suffered any ailment or disease of \* \* \* the heart, blood vessels or lungs? No."

"Have you ever consulted a physician or practitioner for any ailment or disease not included in your above answers? No."

He also gave the answer that the only doctor who had examined or treated him within the past five years had been a certain doctor who had treated him for a cold, and that he was well in a few days.

In 1930, the assured became afflicted with an active pulmonary tuberculosis. He notified the company and was examined by its physician, after which he received payments under the disability benefits provided for in the policies in an aggregate amount of \$2,000 over a period of nearly a year. During that time under the terms of the policies, no premiums were paid by the assured. The company then discontinued making payments of disability benefits to J. and notified him that it would cancel the policies unless he paid the premiums that had been waived during the period of disability.

The assured thereafter brought an action against the company to require it to continue to pay him disability benefits and to restrain the company from canceling the policies. The answer which the company put in in the action admitted that the policies had been issued, and that it had refused to pay disability benefits, but set up as a special defense, the charge that the assured had been induced to issue the policies by fraud. The company alleged that the plaintiff had failed to disclose that prior to the date he applied for the insurance, he had suffered from pulmonary tuberculosis.

The case came on for trial and the plaintiff put the policies in evidence and called as a medical witness a doctor who had examined him for the first time the day before the trial. That physician testified that the plaintiff was then suffering from moderately advanced active pulmonary tuberculosis. He stated that in his opinion the same condition had existed for seven months before the trial and that the plaintiff was totally disabled by reason of the disease.

The defendant insurance company produced as witnesses two physicians. Each testified that they were acquainted with J. The first testified that the plaintiff had consulted him professionally about half a dozen times prior to December, 1928. The other testified that he had seen the plaintiff

a few times before that date. The defendant's counsel asked each of the doctors the question: "At that time did you find him suffering from any ailment or disease?" This was objected to on the ground that it was a privileged communication, and that the plaintiff was entitled to keep the doctors from testifying by reason of section 352 of the Civil Practice Act. After conference with the Court the question was withdrawn and again asked in the following form: "At the time he consulted you, or on the occasions he consulted you, was he suffering from any ailments or disease?" An answer to the effect that the plaintiff was sick was permitted. The next question was: "What was that ailment or disease, doctor?" And as to that question the Court ruled that it could not be answered because of the prohibition contained in section 352.

The trial terminated in favor of the plaintiff, and an appeal was taken. The Appellate Division by a divided Court affirmed the judgment of the Trial Court below, but the case was carried up to the Court of Appeals, the highest Court of the State. The said Court directed a reversal of the judgment, and ordered a new trial ruling that under the circumstances the doctors should have been permitted to give their testimony.

The Court upon determining the matter stated its interpretation of the purpose of the statute as follows:

"In considering the application of the section under the facts of this case, the purpose of the statute and the public policy evidenced by the enactment should be appreciated. Its purpose is to protect those who are required to consult physicians from the disclosure of secrets imparted to them; to protect the relationship of patient and physician and to prevent physicians from disclosing information which might result in humiliation, embarrassment or disgrace to patients. When the original statute was enacted, it was believed that the benefits which would accrue from its enactment by preventing disclosure by patients of information gained in consultation and by inspiring confidence between patients and their physicians would outweigh any injustice which might result in particular cases caused by the exclusion of testimony by physicians at trials."

The Court summarized its reasons for its decision as follows:

"When the respondent called a physician as a witness who testified that for at least seven months the respondent had been suffering from 'active pulmonary tuberculosis,' he exposed his condition to the public and disclosed the secret which the statute was enacted to protect and keep secret. By his own act he removed the pro-

hibition of the statute and waived upon the trial the protection which it afforded him.

"The contention that a patient may waive the privilege afforded by the statute himself by calling a physician and disclosing his physical condition and at the same time insist that the statute bars the defendant from calling a physician to describe his physical condition, if sustained, would in many cases result in injustice and fraud. It would be making a use of the statute never intended by the Legislature and not now approved by this Court. It is urged by respondent that even if it was proper to permit testimony to be given by the doctors called by the defendant as to respondent's physical condition during the seven months preceding the trial referred to in the testimony given by the doctor called by respondent, it would not have been proper to allow testimony by them as to his condition over three years before that time when the applications for insurance were signed.

"Such contention overlooks or ignores the purpose of the statute.

"There would be no more humiliation, mortification or disgrace in having the fact disclosed that he was suffering from pulmonary tuberculosis over three years and seven months before the trial than in the fact that he had that disease for seven months before the trial.

"If his condition could not be shown as it existed three years before, could it be shown as it existed three months or three weeks before?

"The disease is a progressive one. Respondent may or may not have suffered from it at the time he signed the applications for insurance. That was the issue in the case, and in fairness to the appellant, it was entitled to have received the testimony of doctors who examined him before the application was signed."

The decision is unquestionably a just one. As the Court pointed out, the plaintiff through his own witnesses disclosed to the world his own physical condition, and thus it would be manifestly unfair for him to seek to seal the lips of the physicians called by the defendant who could testify to facts that were material to the issue.

### Death from Peritonitis

A surgeon was called in consultation by a general practitioner in connection with the treatment of a woman 38 years of age. He received a history that the patient had been suffering a few days from severe lower abdominal pains which had become persistently worse. An examination showed marked tenderness and rigidity of the entire lower abdomen with considerable distention. A vaginal examination showed marked tenderness behind the uterus and a sensitive mass in the pelvis behind the uterus and there was severe pain in attempting to move the cervix. A diagnosis was made of pelvic peritonitis and the patient was immediately removed to a

hospital for treatment. The patient was given hot irrigations and the next day she showed considerable improvement, her temperature having gone down to normal and her pain having almost entirely disappeared. The day thereafter, however, her general condition grew rapidly worse with severe abdominal pains, together with nausea and vomiting.

Another surgeon was called in consultation and he diagnosed her condition as one of intestinal obstruction due to postoperative adhesions following the previous operation. Both surgeons agreed that an operation was necessary and one was immediately performed. The first surgeon opened the abdominal cavity, found it to contain a large amount of thin odorless purulent fluid. The appendix was found to be swollen, bright red in color, but not perforated. The culture taken from the abdominal fluid indicated that there was a hemolytic streptococcus infection present. The postoperative diagnosis was that of general peritonitis and acute appendicitis. Following the operation, the patient failed to rally and died the following evening.

An administrator was appointed who instituted an action to recover damages charging the defendant with having caused the death of the decedent, based upon the claim that he failed to properly observe the patient's symptoms to operate upon her soon enough to save her life.

The case came on for trial and the issues of the case were submitted to a jury which rendered a verdict in favor of the defendant, thereby exonerating him from the plaintiff's claim that he had been guilty of malpractice.

## Treatment of Lacerated Hand at Clinic

A man 28 years of age entered a hospital clinic for treatment of a lacerated wound from the palmar surface of his hand. He stated that he had cut his hand by falling on some broken glass. He was treated in the emergency ward by an interne who clamped and tied off the bleeding blood vessels and inserted five sutures and a drain. It was found that the tendon was severed, but it was not sutured because of the hemorrhage.

The following day he returned to the clinic and was there seen by the surgeon in charge who shortened the drain and redressed the hand. He never saw the patient thereafter.

An action was brought against the surgeon charging him with malpractice and claiming that in treating the patient he had broken a needle which he had allowed to remain in the patient's hand. He claimed that he had been obliged to undergo an operation for the removal of said needle. The surgeon had no recollection of the matter at all, the patient having been treated as one of the routine clinical cases and so far as he was able to ascertain from the hospital records of the case, he had never used any needle in treating the patient.

An examination before trial was had of the defendant, and he testified that he had used no needle in connection with the case and that so far as he knew no needle had been broken by anyone in the treatment of the case at the clinic. After the said examination before trial the plaintiff's attorney stipulated to discontinue the action against the surgeon.

## LIVING WITH HALF A BRAIN

The mystery of how and why we think, live, move, and have our being deepens as we learn that patients not only survive with half the brain taken out but read, write and figure and are free from mental disorders. Dr. Walter E. Dandy, of the Johns Hopkins Hospital, reports that he removed the entire right cerebral hemisphere of three patients without disturbances of the thought processes of any one of them. It was "most disappointing" to him, he says in his report to find "that some functions of the brain are not stored or at least are not activated there." These disclosures are intensely interesting and observes the Virginia Medical Monthly, and it adds that, although familiar with the experiments upon decerebrated frogs and pigeons and with the behavior of Goltz's dogs it is difficult for us to

realize that the human being can survive the loss of an entire cerebral hemisphere. To be told that he can survive it without demonstrable mental defect is even more astounding. Post-operatively all of Dandy's cases showed hemiplegia and hemianesthesia but he reports that they were perfectly oriented and memory was unimpaired that they were able to write, read, and handle figures accurately that they were coherent and free from abnormal mental states such as phobias, delusions, hallucinations, melancholia, and expansive ideas. The fact that none of these patients survived operation many months may be important in the mortality statistics of neurological surgery but this minimizes in no way the interest Dr. Dandy's paper has for the student of the physiology of the brain.

# Books

## BOOKS RECEIVED

[Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from this column will be made for review, as dictated by their merits, or in the interests of our readers.]

**The Harvey Lectures.**—Delivered Under the Auspices of the Harvey Society of New York, 1932-1933. Series 28. Julius Bauer, M.D., L. O. Kunkel, M.D., and others. Octavo of 233 pages, illustrated. Baltimore, Williams & Wilkins Company, 1934. Cloth, \$4.00.

**The Study of Anatomy.**—Written for the Medical Student. By S. E. Whinnall, M.D. Second Edition. 12mo. of 93 pages. Baltimore, William Wood & Company, 1933. Cloth, \$1.50.

**Contagious Diseases.**—What They Are and how to Deal with Them. By W. W. Bauer, M.D. 12mo. of 218 pages. New York, Alfred A. Knopf, 1934. Cloth, \$2.00.

**Naturc, M.D.**—Healing Forces of Heat, Water, Light, Electricity and Exercise. By Richard Kovacs, M.D. 12mo. of 181 pages, illustrated. New York, D. Appleton-Century Company, 1934. Cloth, \$2.00.

**The Practical Medicine Series.**—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Series 1933, Chicago, The Year Book Publishers [c. 1933]. The 1933 Year Book of Pediatrics, edited by Isaac A. Abt, M.D., and Arthur F. Abt, M.D. 12mo. of 548 pages, illustrated. Cloth, \$2.25.

**International Clinics.**—A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, etc. Vol. 1, 44th Series, 1934. Louis Hamman, M.D., Editor. Octavo of 320 pages, illustrated. Philadelphia, J. B. Lippincott Company [c. 1934]. Cloth, \$3.00.

**Surgical Clinics of North America.**—Vol. 14, No. 1, February, 1934. (Philadelphia Number.) Published every other month by the W. B. Saunders Company, Philadelphia and London. Per Clinic Year (6 issues) Cloth, \$16.00; Paper, \$12.00.

**Demonstrations of Physical Signs in Clinical Surgery.**—By Hamilton Bailey, F.R.C.S. Fourth Edition. Octavo of 287 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$6.50.

**An Outline of Immunity.**—By W. W. C. Topley, M.D. Octavo of 415 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$6.00.

**Aids to Neurology.**—By E. A. Blake Pritchard, M.D. 16mo. of 376 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$2.00.

**Bergey's Manual of Determinative Bacteriology.**—By David H. Bergey, Fourth Edition. Octavo of 664 pages. Baltimore, The Williams & Wilkins Company, 1934. Cloth, \$6.00.

**Practical Methods in Biochemistry.**—By Frederick C. Koch. Octavo of 282 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$2.25.

**Recent Advances in Psychiatry.**—By Henry Devine, M.D. Second Edition. Octavo of 364 pages. Philadelphia, P. Blakiston's Son & Co., 1933. Cloth, \$4.00.

**Practical Medicine Series.**—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Series, 1933, Chicago, The Year Book Publishers [c. 1933]. The 1933 Year Book of Dermatology and Syphilology. Edited by Fred Wise, M.D., and Marion B. Sulzberger, M.D. 12 mo. of 458 pages, illustrated. Cloth, \$2.25.

**Practical Medicine Series.**—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Series 1933, Chicago. The 1933 Year Book of Neurology and Psychiatry. Neurology, edited by Peter Bassoe, M.D. Psychiatry, edited by Franklin G. Ebaugh, M.D. 12 mo. of 470 pages, illustrated. Cloth, \$2.25.

## BOOKS REVIEWED

**Human Sex Anatomy.**—By Robert Latou Dickinson, M.D. Quarto of 320 pages, illustrated. Baltimore, Williams & Wilkins Company, 1933. Cloth, \$10.00.

This book is one of several sponsored by the National Committee of Maternal Health Inc. Because of the need for exact anatomy as a basis for the thorough understanding of sex physiology, it was thought necessary to start at the beginning and collate published material, and also to issue hitherto unpublished data on sex anatomy of humans.

The drawings are wonderfully well done. The author says that much of the value of the volume is in the anatomical illustrations. The reviewer is of the opinion that the description of sex anatomy and physiology given in the text is excellent and sufficient. The book would be in better taste if a few of the illustrations had not been published.

WM. SIDNEY SMITH

**Modern Clinical Psychiatry.**—By Arthur P. Noyes, M.D. Octavo of 485 pages. Philadelphia, W. B. Saunders Company, 1933. Cloth, \$4.50.

The author has had great experience in the field of acute and chronic psychiatric disorders. His book is written in the light of his own rich experience. However, it gives due consideration to the opinions of others, and throughout the text there are references to the publications and theories of the various workers in different fields of psychiatry. It differs from many books in the respect that it is written in a facile pen and holds the attention of the reader throughout.

This book is highly recommended because of its thoroughness, the method of presentation of its contents, and the remarkable way in which it holds the attention of the reader. It should serve as a model text book for medical students.

IRVING J. SANDS

**Neurology.**—By Roy R. Grinker, M.D. Octavo of 979 pages, illustrated. Springfield, Ill., Charles C. Thomas [c. 1934]. Cloth, \$8.50.

Here is the modern version of a system of neurology.

This volume possesses fundamental and reliable explanations of all the facts in a readable and understandable manner. This is a book which can well serve to bring any physician up to date in an important field of medicine without losing himself in a forest of esoteric technicalities. For the student it is of equal importance because it offers a clear elucidation of the newer biological concepts as applied to neurology while serving as a thorough-going text book. It is thus that a biological analysis of each group is developed as an introduction to the study of the anatomy, histology, physiology, and pathology of the various chapters in neurology.

SAM PARKER

**Red Medicine: Socialized Health in Soviet Russia.**—By Sir Arthur Newsholme, M.D., and John A. Kingsbury, LL.D. Octavo of 324 pages, illustrated. Garden City, N. Y., Doubleday, Doran & Company, 1933. Cloth, \$2.50.

A very good title for a book describing the care of the sick to-day in Russia.

The authors endeavor to appraise the prevailing system of medical practice as observed by them on a special mission to Russia for this specific purpose. They stress their attempt to present the situation in an unbiased manner. The authors, however, are well-known advocates of state medicine, or at least, of systems bordering very closely upon it. It is our impression that the defects in the Russian system have been overlooked in this volume.

The book should be read by every wide-awake physician. In these days, when the advocates of state medicine are very active, it behooves the medical profession to be well informed as to the arguments for and against socialized medicine.

Merely to use obstructive tactics will not suffice. Changes in some of the present methods of private practice are coming. The medical profession must be prepared to lead and guide in these changes. Constructive thinking and action are required; otherwise, nonmedical health leaders will do it for us.

A. E. SHIPLEY

REMARKS OF THE INCOMING PRESIDENT  
ACKNOWLEDGING HIS INTRODUCTION

ARTHUR J. BEDELL, M.D.

*Albany**Mr. President, Ladies and Gentlemen:*

In assuming the duties of the President of the Medical Society of the State of New York, I am deeply conscious of the honor conferred upon me and well aware of the numerous weighty decisions that will have to be made this year.

My predecessors in this high office have all devoted their energies to the improvement of the practice of medicine in bad times as well as good, to the end that the people of the State of New York have never been as healthy as to-day.

The period of general economic stress continues in spite of many experimental methods of stimulation directed toward its relief. We believe it is our right and indeed our bounden duty of the present to look to the future after serious contemplation, and ask where we as American people are going. I believe that we should be informed regarding the road as well as the destination. As men and women engaged in one of the highest callings, we have by training and contact become versed in the reactions of the human body and mind. We would be negligent in our trust if at this time we failed to direct medical thought into channels from which therapeutic inspiration, medical relief, disease prevention, and cure can be most readily acquired.

There is much talk about service rendered without profit. Surely there can be no lasting results in any field of endeavor unless they are based on economic satisfaction. You ladies and gentlemen will

return home to the practice of the profession into which you entered after an unusually prolonged, strenuous, expensive, self-sacrificing period of preparation. Don't be misled by the satans of propaganda who wish to take you on a high hill and offer you all that is visible so that they may from that time control not only your body but your very soul. Resist with all that is within you the beguilements of those who would ensnare you.

My felicitations are extended to the members of the Women's Auxiliary of the Medical Society of the State of New York. For many years I have spoken in favor of having a women's auxiliary in our State. Mrs. John O. McReynolds, a former President of the National Auxiliary, tried very hard to establish this unit, and I know that to-day she will rejoice with you in the consummation of one of her great desires.

We look forward to a close partnership and enlist your aid in preserving the dignity and the individuality of the practice of medicine. We know that you appreciate the trials, tribulations and satisfactions of the medical life and we are convinced that you will do all in your power to maintain the greatest efficiency of the physician, that you will prevent the implantation of false doctrines and strive to retain the good in our present system of medical service.

And now, Mr. President, with the help and counsel of all the members of this Society and the newly formed auxiliary, we look forward to a year of intelligent, cooperative, and well-directed activities.

*Delivered at the Annual Banquet at Utica, N. Y., March 15, 1934*

# QUALIFIED MEDICOLEGAL EXPERTS, THEIR VALUE TO THE COMMUNITY AND TO THE MEDICAL AND LEGAL PROFESSIONS

CHARLES NORRIS, M.D.

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In the past this matter has been neglected. This neglect is traceable and involved in the evolution of medicine in our country. In the early days the physician served an apprenticeship with a physician or surgeon, and thus he slowly learned his medicine. Then there was a period of medical schools almost entirely proprietary in character, followed by a period in which the splendid medical schools have been slowly evolved. Scientific research and all phases of medicine have made marvelous strides. However, medicolegal medicine has not established itself anywhere in this country on a firm and progressive basis. The reasons for this neglect will be taken up later in the discussion of the second division of my subject, namely, the legal or official status of the coroners and medical examiners' systems of the country. Let me briefly state my conception of the qualifications of a medical examiner. The primary qualification is that he must be thoroughly versed in the practical side of pathology, hence a long and varied autopsy experience. The pathologist who has had varied experience in hospital work of this character is, in my opinion, qualified to begin his task along medicolegal lines. He will, however, run across cases in which he will be puzzled, since his experience has not included just that kind of a case. "One of the most interesting of the problems encountered daily is that even after a thorough post-mortem examination we may be in doubt as to the cause of death." To elucidate, when an unknown adult is found in coma, and there is no history connected with the death, and no previous medical history is available, frequently nothing is found which will indicate to an experienced pathologist the cause of death. Thorough follow-up work is required. In a large city, most of these cases fall into the group of narcotic, alcoholic, ethyl or methyl, and various other poisons, including overdoses from barbituric acid compounds, strychnine and very acute cases of sepsis.

After autopsy, the subsequent work entails chemical, microscopic, and bacteriologic examination of the viscera, and in homicidal cases examination of suspected blood stains to determine if they are actu-

ally blood, and if blood, whether of human or animal origin and the examination of seminal stains. Serological examinations may be necessary, involving the use of the precipitin reaction, and blood-grouping tests which may help in the identification of the person.

A little consideration will convince the reader that no one man is competent or able to perform alone all of these tasks. However, the head of a department, the medical examiner of a county or of a city, should have enough experience to realize the importance of the work at hand, sufficient knowledge to see that there is preserved enough tissue for chemical and microscopic examination. A prevalent belief is that all that is necessary for toxicological analysis are the stomach contents. Chemical tests on this material are important, of course, but alone do not afford opportunity for making valuable observations and deductions which are necessary to elucidate a case of poisoning. Until absorption takes place from the stomach, the contents of the latter may be considered to be outside of the body. It is, therefore, of extreme importance to accurately determine qualitatively and quantitatively, the amount of poison in the brain, liver, kidneys, and other organs where the poison may be deposited as in the bones in radium and lead poisoning.

Success of any toxicological investigation depends upon the intelligence and foresight of the pathologist or medical examiner making the autopsy. The decision as to whether a chemical analysis should be carried out rests with him. In cases of poisoning there is a tendency to overestimate the work of the toxicologist or perhaps underestimate the work of the pathologist performing the autopsy.

The term forensic medicine denotes all in medicine that may be applied in law and all in law that has to do with medicine. The terms legal medicine, medical jurisprudence, and forensic medicine are generally used synonymously, although they are not. Legal medicine means, strictly speaking, medicine which is legal as differentiating it from medicine which is illegal, and using it in the accepted meaning, medicine

as applied to legal cases. Medical jurisprudence refers to jurisprudence as applied to medicine. Forensic medicine has reference to the use of medical science to elucidate legal problems. I have quoted from that splendid volume of Alfred W. Herzog, entitled "Medical Jurisprudence."

A symposium upon the interesting and important subject of medicolegal investigation is of striking significance as forensic medicine has been notoriously neglected in this country. It is properly handled in Suffolk County, Mass., the City of Boston, New York City, and Newark, N. J. In these three cities the coroner's system has been overthrown and the medical examiner's system has been installed.

Specialism in medicine and surgery have grown enormously, and I do not hesitate to state that coroner's physicians, autopsy surgeons, or medical examiners, to be thoroughly competent, must be specialists who devote their entire time to this important subdivision of medicine.

That part of forensic medicine which concerns itself with the accurate determination of the cause of death, readily divides itself into two divisions. The first, and certainly for the medical profession the most important division, is that which concerns itself with the cause of death, a strictly medical problem.

The undergraduate and graduate students are given almost no medicolegal training in our medical schools. In my opinion, this is responsible for the unfamiliarity of physicians and surgeons with their obligations to the coroners or to the medical examiners, i. e., to the prosecuting arms of the law, the police, and the district attorney.

There is a curious misconception and failure to understand what constitutes a medical examiner's case. From time immemorial the State has assigned to a certain group of physicians the responsibility for determining the cause of death.

I quote from Dr. Oscar T. Schultz:

A dead body is found. What a host of questions must be answered! Whose corpse is it? How came he to his death? By natural causes by accident, suicide or murder? Is anyone criminally responsible? Efficient, painstaking prompt investigation by experts is required. If someone is criminally responsible society demands that he be promptly apprehended and properly dealt with. The first inquiry can be handled only by experts in medical and allied sciences. The skilled pathologist aided by the immunologist, the chemist, the toxicologist and the bacteriologist must answer as to the physical cause of death. Then the experts in investigation and detection of crime with skilled technicians in photography, fingerprint reading, identification of individuals and such matters, must discover and

apprehend the perpetrator, after which the prosecuting officers and courts must function.

The evidences with which the medical experts must deal will usually be found upon or in the body—the most important of those which the other investigators must handle will usually be found in or on the body and on or about the scene of its discovery. How tremendously important it is, then, that the investigation be made immediately, and before the body or place has been in the slightest disturbed? And how important it must be that skilled persons with adequate equipment be instantly available. European cities have realized this and have made most thorough preparation in personnel and equipment for criminal investigation. In most places in this country the initial investigation is made by the coroner.

How competently this work is done should be a matter of concern to every community, and of especial concern to thickly populated urban centers where crime and its detection and punishment assume great importance. That duties which fall upon the coroner are not always performed in a thoroughly competent and scientific manner must be apparent to everyone who has given any thought to the subject. The generally unsatisfactory character of the work of the American coroner is reflected in the backward state of medicolegal science or forensic medicine in the United States.\*

#### CASES INVESTIGATED BY THE EXAMINER

The kinds of cases to be referred to the medical examiner are specified in the following section, in which it is important to note that the police are required to notify directly the office of the medical examiner.

When in the city of New York, any person shall die from criminal violence, or by a casualty, or by suicide, or suddenly when in apparent health, or when unattended by a physician, or in prison or in any suspicious or unusual manner, the office in charge of the station house in the police precinct in which such person died shall immediately notify the office of the Chief Medical Examiner of the known facts concerning the time, place, manner, and circumstances of such death.

Dr. W. J. MacNeal describes the functions of the medical examiner in these words:

The functions of the office of chief medical examiner are exclusively concerned with investigation and adequate record of scientific facts. The policy of this investigatory office is according to the chief examiner to bring out all facts, medical, pathological or chemical, and to present such evidence in proper fashion that is to make direct and trustworthy inferences. Any failure or neglect of this cardinal rule destroys at once the independent standing of the office and would tend to impair its prestige as an unbiased scientific agency. The detective and legal investigations formerly in the province of the coroner are turned

\* Quotation from "The Coroner and Medical Examiner" by Oscar T. Schultz and E. M. Morgan published by the National Research Council, National Academy of Science, Washington, D. C., Bulletin No. 64.

over by law to the police and to the district attorneys, who proceed with their work on the information and findings furnished by the medical examiner. Inquests such as were held by the coroner are no longer made; the judicial functions are now held before the magistrates in the Homicide Courts and by the grand jury under guidance of the district attorney or before a referee in compensation cases. To aid in his investigation, the medical examiner has been given the power to administer oaths, take affidavits, proofs, and examinations as to any matter within the jurisdiction of the office. He has practically summary powers and acts freely in his own field without interference from police or district attorney. He also has power to summon witnesses to his office. The determination of the cause of death is primarily a medical problem in all cases. In most cases of violent or suspicious or mysterious death, it is a problem which lies strictly within the province of the medicolegal pathologist. It is essential and right that the office of chief medical examiner should be allowed freedom of action in the investigation of these cases. The law requires that the medical examiner, being notified of the death, shall 'go to the dead body and take charge of the same.' No one may move a dead body without his consent or remove objects from a room where a death occurred in such cases. With the exception that the police may take charge of valuables the medical examiner controls everything relating to such cases until his examination has been completed. The law is carefully worded to give the medical examiner control of the dead body under investigation and leaves to his discretion the matter of an autopsy. It also emphasizes that the report of each case shall be promptly rendered to the district attorney whenever, in the judgment of the medical examiner in charge, there is any indication of criminality."

A medical examiner should have the qualifications of a well-trained and cultured pathologist, and he should be given the facilities to make bacteriological, microscopical and chemical studies. It is an impossible task to make use of the volume of material along these lines as successfully as one would wish. The routine work performed by the chemical department is enormous. Dr. Gettler, who is the toxicologist, has most unusual experience and training. He should be provided with well-trained assistants, with a salary enabling them to live independently from other sources of income. The "research work" is a necessity in many of our cases. Many years ago Dr. Gettler and Prof. Haines of Chicago, spent five to six months examining the viscera of a celebrated case at the chemical department of Bellevue Hospital. Extraordinary problems are encountered in many of the routine investigations.

I am enthusiastic to tell of the needs of the office, the glaring deficiencies. The microscopic section work is considerably hampered by the lack of trained technicians. At the present time there is only

one worker who cuts the sections for us in the cases in which it is absolutely necessary for us to inform ourselves concerning the microscopical appearances in order to determine the kind of disease processes which are present.

Attention is called to the signal lack of medicolegal training furnished to undergraduates and graduate students by the medical schools, and this is responsible for the marked unfamiliarity of physicians and surgeons with their obligations to coroners or medical examiners, which means to the prosecuting arms of the law, the police, and the district attorney. How many times have bullets abstracted at operations or removed from the clothes, been lost or misplaced and thus have remained unidentified. Clothes are in many instances thrown away. They are often of the greatest value in court cases. On the other hand, descriptions of wounds, if powder-marked or smudged, are not noted on the surgical histories. One can realize how important these markings are, especially in homicide cases where a defense of suicide is maintained and where death intervenes hours later. The patient has always been washed and then the determination by the medical examiner on this important point, namely, the distance that the gun was held, is impossible. The value of the evidence furnished by the hospital or private physician may be, therefore, of vast importance.

At Bellevue I have preached to the hospital internes the desirability of withdrawing blood from patients suffering from carbon monoxide poisoning. In most cases the simple dilution test is all that is necessary; it can be done in the course of a few minutes and it is always successful where the percentage of carbon monoxide is 10 per cent or more. After twenty-four hours, it is difficult, except by the Van Slyke method, to determine the presence of smaller percentages of carbon monoxide. In a similar way, in cases in which overdosage of drugs or poisons or accident or suicide plays a rôle, efforts should be made to preserve the vomitus and the urine. These specimens must be religiously kept and sent to the chemical laboratory to determine the presence of the metals or alkaloids, etc., whether such patients die or recover.

The mutual relationship of the practitioner to the medical examiner or coroner's physician is an intimate one, and I may say closer cooperation must be established before success in the elucidation of many death cases will be forthcoming.



Industrial compensation cases need a few minutes of exposition. All casualty cases come under the jurisdiction of the medical examiner. There is no definite time limit when this rule becomes obsolete. The casual finding of a bullet at autopsy, in a man who was shot in the Civil War I would not bring under the jurisdiction of the medical examiner. Where the deceased has been shot in the World War or even in the Spanish-American War, the situation is altered. It is the function of the medical examiner to render his opinion upon the cause and effect of the bullet wound in regard to the death of the deceased. Upon our judgment depends the adjudication of claims by the Veteran's Bureau, or in the cases of industrial accidents, before the compensation court. This is a duty which we cannot pass up, and it is a task not readily undertaken by the busy practitioner or the hospital attendant.

Accurate mortality statistics are based upon complete autopsies. Let me illustrate: A severe cardiac decompensation enters the hospital and dies before a satisfactory clinical examination is possible, and he is not autopsied. To illustrate again, a man entered the hospital and lived four days. A Widal reaction was weakly positive and the hospital history blank furnished to the medical examiner suggested a pneumonia and it was thus signed out by one of the medical examiners. Later typhoid bacilli were reported in the urine and stools. Our medical examiner's history and death certificate was then changed. On account of the volume of cases handled no autopsy was made on this case. It illustrates the necessity of postmortems where the clinical diagnosis is uncertain. The same may be said in many instances of glanders, anthrax, tetanus, hydrophobia, and encephalitis, when the examinations should include routine microscopic and bacteriologic examinations. Accurate statistics are thus made possible.

Sudden deaths, unless there is a reliable family history confirmed by a physician, require postmortem examinations, to eliminate suicide by cyanide, etc. Carbon monoxide deaths may be difficult of determination. A woman was apparently taken sick at about five o'clock in the afternoon, a doctor was called, she died an hour later and the doctor issued a certificate of heart disease. In an adjacent building some hours later a man was found dead and referred to the medical examiner who suspected gas, and learning that a woman next door had also died, he sent both bodies to the morgue. A large amount of carbon

monoxide was found in the blood of both, the gas coming from the defective flue of a water heater. Before the settling of the blood which occurs after death, the cherry-red discoloration of the dependent portions of the body may not be present. It is only later that this characteristic becomes pronounced and makes the diagnosis comparatively easy. Often the families remove bodies of their relatives from the place where the person had turned on the gas with suicidal intent, open all the windows and remove the body to some other room. If seen before the cherry-red discoloration is pronounced, it is difficult, with an evasive history, to make the diagnosis of gas poisoning. Again a man evidently suffering from anginal attacks, who was found in his bathroom, with the gas turned on and with his lips stained a peculiar reddish color. He had marked coronary sclerosis and fibrous myocarditis. But the cause of his death was illuminating gas poisoning, 58 per cent of carbon monoxide being present in his blood. Furthermore, the mercurochrome found in the stomach and the small gut, even to the ileocecal valve indicated that it had been swallowed hours before death. Attempts were made by the lawyer of the family to have us alter the death certificate, and several physicians maintained that the death was not due to illuminating gas poisoning. No person can live with 40 per cent of carbon monoxide in his blood unless he is removed at once from the gas-laden atmosphere and long-continued efforts at resuscitation are maintained until his recovery. Fifty per cent is a lethal percentage.

Fighting the suicide clause is a financial measure. We omit the "suicide" when we believe that there is not sufficient evidence to warrant this conclusion as the law advises us to err on this side. Certificates are often signed "undetermined" or "pending investigation."

Our functions are investigatory, and we are responsible not only to the family of the deceased but to the insurance companies, compensation and civil courts. Misinformation at times leads us astray. I recall one case with very disastrous results to the insurance company involving \$150,000. It was handled on tour and signed out. The body was then embalmed and on the day of the funeral a representative of an insurance company in which the deceased was insured asked me to stop the funeral and perform an autopsy. The autopsy indicated cyanide poisoning and not pneumonia. It was impossible to prove cyanide present because of the formalin.

No class of cases are so annoying and so unsatisfactory as criminal abortions. Unjust accusation of physicians and midwives must be guarded against, when one bears in mind the large number of spontaneous abortions among multiparae. Ascertainment of the number of criminal abortions performed daily in New York City is an intriguing subject, but no satisfactory answer to this query is possible. Under certain conditions an abortion is justifiable, even if nonlegal. It is unnecessary to enter into details. To recall the many brutal and inhuman criminal abortions that I have witnessed is revolting. A physician who performs a criminal abortion on a woman in his office who is in her third or fourth month of pregnancy, and dilates and cures, and orders her home, commits murder. If indictment and conviction cannot be obtained the perpetrators should be sued for criminal malpractice and debarred from practice. Every effort should be made to punish these inhuman rascals and disbar them from the noble ranks of physicians. An erring girl, a first misstep—one doubtless forced upon her—I believe has a right to demand decent protection and a chance for her life. The horrible examples of criminal abortion I have witnessed are revolting, testifying brilliantly to the crass failures of our criminal laws and of our civilization.

It may be wondered that I referred only indirectly to the title of my paper. It is, however, explanatory of what follows. What are the measures to be adopted to improve the administration of medicolegal procedure? The problems presented by a large city differ considerably from those of smaller cities, towns, and counties. The organization in a large city where volume has to be taken care of is more difficult, and yet the problems presented in small cities or counties are similar, and careful autopsy work must be performed by competent pathologists, and follow-up work along the lines indicated in chemistry, pathology, and bacteriology.

A number of years ago I suggested that in small counties a hospital pathologist and the health officer might assume the rôle of medicolegal expert. Although the suggestion is a workable one, there are immense difficulties since throughout the country the coroner's physicians are appointed largely through political influence. The politicians or rulers have no appreciation of the work involved and many of them do not consider the work necessary. Any progress or change suggested will be considered work of a reformer who is despised because he

upsets the status quo. As the reverent John MacInnis says, "One of the great menaces to real democracy is that political interests and activities are frequently left to selfish exploiters who look upon politics as an opportunity to advance their own interests and feather their own nests."

Let us contrast the system prevalent in this country with the Central European countries, Germany, and Austria, where for decades hereditary intelligence has prevailed and high standards have been enforced. The people recognize the necessity of a thorough investigation of crime and of disease. The investigators are state officers with university training and experience and are appointed by the university. Before appointment to an important post, they have served many years as full-time assistants of experience. The work is supervised closely by the court as to the form in which their reports are written and in smaller towns and cities where the reports are made by less well known experts they are subject to revision by superior experts appointed by the court to serve.

We have nothing comparable to the foreign institutes. A Department of Forensic Medicine was established in New York City last year, a praiseworthy effort on the part of New York University and the Bellevue Hospital Medical School to improve conditions. Unfortunately, meager funds prevent serious work. An animal plant with trained keepers, assistants versed in serology, bacteriology, enough section cutters and laboratory men to perform the necessary work in pathology and chemistry are still wanted. A plant of this character requires of its workers much time, and money is necessary.

In a large city the medical examiner and his assistants should be full-time men without any other interests. Under the existing circumstances, it is not possible to demand from medical examiners that they be full-time men because of the low salary paid to them, and with no increments. Then the dread hanging over them like the sword of Damocles that they may at any time be removed and thus placed in the position in the future of not being able to obtain a living by the practice of medicine.

In a discussion of forensic medicine it is well to bear in mind that the function of the coroner's physician, autopsy surgeon, or medical examiner is purely investigatory. The autopsy must be performed by thoroughly trained and competent microscopists, in a laboratory, capable of running through and sectioning tissues for examination. Also a competent chemist with

assistants and suitable apparatus, and a bacteriologist who is familiar with the details of his work as well as a serologist. Without this there is no progress. And the conclusions to be drawn from an incomplete necropsy are almost wholly untrustworthy, and grotesque failures of justice have been recorded from these.

A medical examiner must have training in the examination of scenes, of the body or bodies found there, in the examination of the clothes of the subjects of homicidal assault, in the recognition of the presence or absence of powder grains, and "in bullet wounds he should possess" a working knowledge of firearms and of the distance at which a gun may have been held to inflict a certain type of wound and also whether or not the clothes have more bullet holes than correspond to the number of entrances and exits on the body.

The profession represented by the medical examiner must be authorized to determine the cause of death or any cases under its jurisdiction by necropsy when he deems it necessary. Lawyers and coroners are not qualified to determine this question, as it is a strictly medical one. Fortunately, in New York City we have complete authority and we do not have to ask permission from any one how we should handle any given case. In some states the district attorney is the one to be appealed to for permission. A ridiculous situation since it is a strictly medical problem. Many jurists believe that the cause of death is objective, that an autopsy should cease the instant when the cause of death has been supposedly reached, seeming to hold the view that the cause of death is an object to be removed from the body when seen. There may be more than one possible cause of death which emphasizes the necessity of a complete autopsy.

Truth compels the conclusion that glaring deficiencies exist in the administrations of the coroner's as well as the medical examiner's system. The remedies are known but not easy of application, for the treatment is not entirely in our hands. Experienced pathologists in control with well equipped laboratories and sufficient clerical forces and photographers are indispensable. The public and our legislatures must be educated to the importance of the subject of medicolegal investigation. The value of necropsy must be taught. Unfortunately, the medical profession is somewhat responsible for the antagonistic attitude of the public. The public, to be consistent, should realize that if an autopsy is a desecration, embalming is certainly one.

I am, of course, not opposed to embalming.

What training should coroner's physicians and medical examiners have? A medical degree from an A-1 college. At least two years as an interne in a hospital which gives its internes at least a six months' course of laboratory training in clinical pathology and autopsy work, under a recognized pathologist, at best too short a period of training. All appointees should be civil service, although I admit being in the civil service does not crown him with a halo.

To quote again from Oscar T. Schultz, and I agree with him, it appears extremely doubtful that a comprehensive course in forensic medicine belongs in the regular medical curriculum. The student should have some knowledge of his own legal rights and duties as a physician, and he should have an outline of the relation of his profession to criminology. More detailed and specific training which would fit him for the duties demanded of a coroner or medical examiner should require post-graduate study in an institution organized for such work.

Training for the career as medical examiner, provided the country could be made to realize the importance of this field of work, would demand an amount of time which cannot be fitted into the regular curriculum, and a degree of specialized training which is not the aim of the fourth year medical course.

The situation is similar to that which obtains in public health and sanitation. There must be a demand for properly trained men. There must be opportunities which would make medical graduates wish to elect a career as medical examiner. And there must be facilities for obtaining a thorough training, which would fit him for such a career.

The elective office of coroner, subject to the vagaries of politics, offers no inducements to the physician to enter the field of forensic medicine. The widespread adoption of the medical examiners system with medical examiners selected honestly and retained under civil service regulations would at once open up a new field for which there are not enough qualified persons at the present time.

In conclusion, the opportunity which I hope may be given to intelligent young men in a Department of Forensic Medicine is fascinating and an esprit de corps must be cultivated. This country is fortunate in the institutions which have developed the important phases of scientific progress in medicine.

## TUMORS OF THE BREAST, THEIR ORIGIN AND COURSE OF DEVELOPMENT

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In order to facilitate the presentation of the subject of breast tumors, the author believes it very helpful to first touch upon the normal histology of the breast. The structure of the breast is so much like the sweat gland that it is often spoken of as a modified sweat gland. Derived from the ectoderm, the breast presents at birth little more than a slight eversion of the nipple which elevates it above the skin level. The glands grow equally in both sexes until the age of puberty when those in the male atrophy and only the main duct persists. In the female, the breasts continue to grow and present discoid masses of connective tissue and fat cells with small scattered groups of duct-like tubules.

Pregnancy stimulates the production of the glandular elements. Toward the end of pregnancy each of the branched glands forms a mammary lobe and its alveolo-tubular end pieces are grouped in lobules. The secretory epithelium is a simple cuboidal or flattened layer in which fat accumulates at the seventh or eighth month. It first appears as granules at the basal end of the cell, where it is received in combination from the surrounding tissue. This fat is not produced by the gland cell. The lumen contains leukocytes from the connective tissue which have passed between the epithelial cells. Some of them degenerate; others receive fat from the gland cells, either in combination, or in drops which are devoured by phagocytic action. The fatty leukocytes grow to considerable size and are called colostrum corpuscles. It is from this substance that the colostrum of the newborn and the colostrum of the prepartum period are produced.

Beneath the alveolar epithelium there are basal cells which have been compared with the muscle fibers of the sweat glands. A basement membrane separates them from the connective tissue which contains many lymphocytes and eosinophils. At the termination of pregnancy the gland cells become larger and are filled with stainable secretory granules and fat droplets; the

latter are near the lumen and are often larger than the nucleus. A few days later some of the glands are flat and empty of secretion while others are tall and columnar with a rounded border toward the lumen and occasionally contain more than one nucleus. The fat which is found within the glands is a product of protoplasmic activity and is not due to a secretion or a degeneration.

Transitions between the low empty cells and the columnar forms occur, but mitoses are absent from the lactating gland. Mitotic figures are often seen normally, however, during the pregnant state. When lactation has ended, the connective tissue increases and the leukocytes reappear and form colostrum corpuscles as during pregnancy. The lobules become smaller and the alveoli begin to disappear. In elderly women all the end pieces and lobules have disappeared and only the ducts remain.

The ducts are lined with simple columnar epithelium surrounded by a basement membrane and generally by circular connective tissue bundles. Toward the nipple each duct forms a spindle-shaped dilatation which is called the sinus lactiferus. The outer part of the ducts consists of stratified squamous epithelium. The skin of the nipple and areola at its base contains pigment in the deepest layers of its epidermis. The corium forms tall papillae and contains smooth muscle fibers some of which extend vertically through the nipple, while others are circularly arranged around the ducts. There are tactile corpuscles in the nipple which become rapidly elevated when irritated. This is thought to be due to muscular activity rather than vascular. There are many sweat glands and sebaceous glands in the areola, and occasionally rudimentary hair follicles are found. The areolar glands or glands of Montgomery are branched tubular glands having a lactiferous sinus and otherwise resembling the constituent mammary glands. Their funnel-shaped outlets are surrounded by large sebaceous glands. The areolar glands are regarded

as transitions between sweat glands and mammary glands. Blood vessels enter the mammary glands from several sources and form capillaries around the alveoli. Lymphatic vessels are found in the areola, around the sinuses and in the interlobular tissue. The collecting vessels pass chiefly toward the axilla; a few penetrate the intercostal spaces toward the sternum. The nerves are similar to those of the sweat glands.

With this brief review of the normal histology of the breast in mind, let us turn to the subject of pathology of the breast. The breast may be the seat of origin of inflammatory, benign and malignant tumors. From this angle the breast may be divided into four zones: first, the nipple zone which includes the nipple, the areola, the ducts beneath the nipple and the area of skin immediately surrounding; secondly, the duct zone which includes the epithelial structures between the nipple zone and breast lobules; thirdly, the acinar zone which comprises the acini composing the lobules and the epithelial structures at the termination of the ducts; fourthly, the fibrous zone which includes the intralobular embryonic connective tissue in the immediate vicinity of the acini and the fibrous tissue between the lobules and the fat. Tumors of the breast may be classified as to their origin in one of these divisions.

#### TUMORS OF THE NIPPLE ZONE

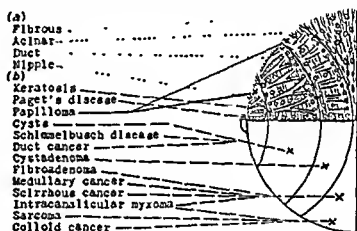
The acutely inflamed swollen nipple of pregnancy, with its reddened fissured appearance, is probably the most common of the nipple effections. The ducts are involved and present the picture of acute inflammation. This process is apt to extend into the duct zone producing acute lactating mastitis, often with abscess formation.

One of the simplest forms of lesion is that involving the external epidermis of the nipple and may be a benign wart or a keratosis. Microscopically they show a hypertrophy of the epidermal layers of the nipple, with much increase in keratin and some small round-cell infiltration. These tumors are due to chronic irritation in which lack of cleanliness plays a large part.

Primary skin eruptions of the eczematoid type may produce an ulceration of the nipple which is characterized by scaling and keratosis. This is usually seen in women over thirty years of age and

may be a forerunner of Paget's disease of the nipple.

*Paget's disease* is usually secondary to a chronic ulceration of the nipple and is malignant. It begins in the basal cell layers of the skin at the point where these cells have invaginated to form the ducts of the nipple zone. This is a transition point between duct cells and basal cells, and in this transitory phase the malignancy begins. Microscopically, clear, large cuboidal cells without keratin, resembling squamous cell carcinoma are usually seen. This cuboidal cell carcinoma extends on either side of the nipple and involves the neighboring basal cell layers of the skin. It may extend downward into the ducts forming areas of duct carcinoma. The malignancy of Paget's disease is very great and the prognosis is grave. It invades the duct zones of the breast early with relatively early metastasis. In early Paget's



(a) Schematic representations of breast zones  
(b) Location of the origin of breast tumors

disease where the tumor is confined to the nipple, radical amputation of the breast may produce a cure.

A pathological dilatation of the ampullae or ducts beneath the nipple may give rise to pain and swelling about the nipple. These ducts may be palpated and feel like nests of worms beneath the nipple. They are found to be filled with mucopurulent material, some of which may discharge from the nipple. Small cystic areas are often found associated with this condition. Infection frequently occurs with pus production. A lymphocytic infiltration occurs in the duct wall. This condition does not ordinarily lead to malignancy. Papillomata growing within the wall of a duct in the nipple zone may give rise to a bloody discharge from the nipple. It is often difficult to palpate these tumors, but they may be easily located by transillumination. The papilloma is found

on section to protrude from the dilated wall of a duct beneath the nipple. It is composed of branches on a stalk from which epithelial duplications are suspended. There is usually an infiltration of leukocytes and fibrous tissue about the dilated cyst wall. The dilatation of the duct may extend deeply into the breast with multiple papillary outgrowths. Some of the cysts may be filled with fresh blood and contain very little of the papillary tissue. A milky discharge from the nipple is indicative of the presence of a galactocoele which may be located deeper in the breast tissue in the duct zone. These cysts may be single but are often multiple. They arise in the proximal portions of dilated ducts but may occur in the ducts just beneath the nipple.

*Syphilis* and *tuberculosis* of the nipple may occur and present similar pictures pathologically to those infections elsewhere. Some fifteen years ago the author saw a case of a young woman 25 years of age who presented herself for examination because of a small "sore" which had occurred recently on the nipple. It was not painful but did not heal readily. He made a dark-field examination and found the *Spirochaeta pallida* present. The blood Wassermann test was negative. On antileptic treatment, the chancre promptly disappeared. At this point, the patient chose to discontinue treatment. The author did not see her again until the early part of 1933. At forty years of age she has a positive blood and spinal fluid Wassermann with the symptoms of cerebrospinal syphilis.

The question of treatment in these tumors does not ordinarily rest within the duty of the pathologist, but he is often called upon for suggestions. The author will state in a general way his opinion regarding treatment of tumors of the nipple. The warts and keratoses yield very well to soap and water and any measures to promote cleanliness. This also applies to the inflammatory conditions. In those cases in which the results of this method have failed, excision of the nipple is logical. In the ulcerative lesions, early excision of the nipple with a sufficient margin is indicated. The duct cysts should be enucleated as early as possible.

Paget's disease when diagnosed in the early stages before duct involvement may be cured by radical amputation. In the later stages radium and deep x-ray therapy

afford the only means, and this may only be palliative.

The treatment of acute lactating mastitis should be aimed at its prevention. Care of the nipples before the birth of the child in pregnant women to avoid cracking is imperative. In the infected cases the application of ice may abort the abscess, otherwise incision and drainage is indicated.

In chronic lactation mastitis, the pronounced hypertrophy of the acinar tissue has subsided, but the breast remains more or less hard and nodular. These areas present adenomatous tissue surrounded by a small round-cell infiltration. Extirpation of the nodules is indicated for microscopical diagnosis. Mastectomy depends upon this report. Unless malignancy is found, a mutilating operation should not be done.

#### TUMORS OF THE DUCT ZONE

Dilatation of the ducts may occur at any point along their course. Here the epithelium hypertrophies and becomes piled into a thickness of several layers with a desquamation of the duct cells into the lumen. These duct cells which are thrown into the lumen have a characteristic foamy appearance with a small deeply staining nucleus. Papillary formation may occur giving rise to the so-called introduct papilloma. This condition occurs more frequently, however, in either the nipple or acini zones.

The cysts form from a marked local dilatation of the ducts. The epithelial lining becomes flattened and, in some cases, may atrophy and disappear, thus forming the cyst wall. A marked fibrous tissue proliferation takes place around the wall compressing the surrounding breast tissue. The contents of the cysts vary, and they may be further classified as to their characteristics.

*Blue Dome Cyst.*—When the cyst wall atrophies and becomes stretched by pressure of its yellowish serous fluid contents, it has a bluish color to its convex surface when first exposed.

*Bloody Cysts.*—When the cyst is filled with sanguinous material, it is usually significant of a papillary outgrowth of the epithelium. These tumors are usually benign, but occasionally under the microscope the papillary epithelium is found invading the cyst wall and breaking through into the surrounding tissue. These are

called papillary carcinoma or "cancer cysts." Their relation to the benign cyst is somewhat doubtful; some pathologists contend that they do not emanate from a chronic cystic mastitis.

*Chronic Cystic Mastitis.*—The exact nature of chronic cystic mastitis is difficult to determine. It presents a dilatation of the ducts with cystic formation always accompanied by hypertrophy of the epithelial structures but rarely associated with hyperplasias of the intralobular connective tissue (intracanalicular myxomata). Clinically this condition presents nodules in the breast which are differentiated from malignancy by their multiplicity and variation in size, often assuming considerable size, and then spontaneously disappearing. It is said that two-thirds of all cases of chronic cystic mastitis contain distinct cysts of the breast, usually of the blue dome type and occasionally of the galactocoele.

*Galactocoele.*—This is a cyst whose contents are of milky character. They are usually found with areas of residual lactating mastitis and are seen in women who have recently borne children. These cysts are often accidentally discovered by the patient. On palpation they are spherical, tense and freely movable and often fluctuation may be elicited. Multiplicity is very common and they may be found in both breasts which is indicative of their benign character. At operation there is often a thin layer of normal breast overlying the lesion which when cut through reveals a bluish color to the cyst, hence the name "blue dome cyst." The contents of the cyst are yellowish, slightly cloudy, and the lining of the wall is distinctly smooth. The surrounding breast tissue may be adenomatous, fibrous, or it may show the presence of dilated ducts. This type of cyst is so characteristic of chronic cystic mastitis that the diagnosis of a benign lesion may be made at operation and an enucleation with a fair margin may be safely done.

*Solid Tumor of the Ducts.*—Duct adenomata are usually found near the acinar end or nipple end of the duct. They present a proliferation of the epithelial cells filling the lumen and dilating it to varying degrees. This diffuse change of the duct may be "precancerous" in nature. Malignancy associated with this type of tumor is usually of very low grade. Unless the adenomatous cells are found invading

the surrounding tissue, the lesion may be considered benign and another phase of chronic mastitis.

*Comedo Cancer.*—When malignancy occurs in association with duct adenoma and the cells are of the duct type, it is called duct cancer or comedo cancer because of a resemblance to the common comedons. This tumor does not often metastasize to the lymph nodes, and if a complete operation is performed removing the entire breast and axillary contents, the patient has about an eight to two chance of complete cure.

#### THE ACINAR ZONE

In this area which represents the alveolar portion of the breast with the branching terminal ends of the ducts, the adenomata are the most common of the tumors occurring here. Nonencapsulated adenoma has little or nothing to distinguish it histologically from the normal breast parenchyma. One of the most definite types of breast adenoma which deserves clinical recognition is the so-called aberrant or axillary breast which is a zone of breast parenchyma forming a swelling in the axillary fold; it may not be noticed by the patient until the hypertrophy of the breast at pregnancy. Multiple indefinite nodules may occur in one or both breasts at the menopause. These are due to isolated islands of breast parenchyma which are more definitely cellular than normal. Microscopically, however, these areas have little to distinguish them from the parenchyma of the normal breast tissue.

*Chronic cystic mastitis* often involves the terminal portion of the ducts, producing an epithelial overgrowth in the dilated area and resulting in the formation of cysts. These cysts have the characteristic wall with the epithelial lining. At some points, however, there is a reduplication of the epithelium giving rise to the papillary formation. Therefore we may have simple adenoma, adenocystoma, and papillary cystadenoma, according to their histological structures. These conditions usually occur bilaterally and may occur simultaneously. Chronic cystic mastitis with cystadenoma or papillary cystadenoma is called *Schimmelbusch's disease*. This is not ordinarily malignant but in the papillary cystadenoma type, the papillary outgrowths may break through the cyst wall invading the surrounding tissues and taking on the

characteristics of a papillary carcinoma. Ordinarily isolated nodules may be removed, and satisfactory results are to be expected. In diffuse Schimmelbusch disease mastectomy should be performed. The subsequent procedure should depend upon the microscopical findings. As malignancy is not common in these tumors, a cure may be expected.

*Medullary* and *scirrhous carcinoma* are the usual types occurring in the acinar zone. They are usually found in the upper and outer quadrants of the breast and therefore are a considerable distance from the nipple. The very cellular growth with a solid proliferation of epithelial cells of the large malignant type are spoken of as the medullary carcinoma. The more common type of cancer in this area is the so-called infiltrating or scirrhous type which is characterized by a marked fibrous tissue proliferation around it with its origin in the terminal acini of the ducts. Microscopically, the cancer cells infiltrate the surrounding lobule and may extend to form islands of tumor separated by the dense fibrous tissue.

The earliest clinical signs of malignancy in a breast tumor of the medullary or scirrhous type is the feeling of a hard nodule some distance from the nipple in the upper or outer quadrant which has caused no pain. In the surrounding structures there is an atrophy of fat with an increase in fibrous tissue which causes dimpling or retraction of the overlying skin with more or less fixation of the tumor. This can often be better demonstrated by requesting the patient to raise the arm above the head. These tumors occur more commonly from middle life onward.

Early mastectomy should be employed if no lymph node involvement is found. When axillary nodes are found with the reddening of the skin about them—the so-called pigskin appearance—the prognosis is hopeless as regards cure. As these tumors are particularly radioresistant, radiation is only palliative. These tumors arising in very late life are less malignant than those arising in the forties and fifties. We have records of 5 cases in which the tumors arose after seventy years of age without metastasis, in which a simple enucleation of the tumor with a wide margin was done, and there has been no recurrence within two years. One of these

patients is alive and without recurrence after five years.

Bloodgood states that "The most competent guide to the experienced surgeon in the diagnosis of early carcinoma is the palpation of a single lump either definite or indefinite which is not accompanied by other lumps of similar character in one or both breasts and which is not associated with the history of disappearance or reappearance. Under such circumstances, the wisest course is to explore and to determine the nature of the tissue of the area by microscopic examination."

#### THE FIBROUS ZONE

Benign tumors of this region consist of the intracanalicular myxomata and adenofibromata. These tumors arise from the intralobular connective tissue, proliferating within the lobule of the breast tissue and compressing the epithelial structures. They usually finally invaginate themselves into one of the larger ducts. They have a typical myomatous stroma with an early formation of spindle-shaped fibrous tissue cells. Hence the terms myoxoma, myxofibroma, fibroadenoma, etc. Bloodgood refers to a fibroadenoma as a tumor of adenomatous character, definitely encapsulated with a marked proliferation of the interlobular connective tissue. They are definitely circumscribed, hard, with a grayish surface, as distinguished from the pale reddish color of the simple adenoma. They are always benign. The author wishes to distinguish between intracanalicular connective tissue and intercanicular connective tissue. The former is a fine embryonic type of connective tissue found in the immediate vicinity of the acini and terminal ducts. The latter is a more heavy, dense, fibrous tissue surrounding the duct lobules.

Clinically these tumors may be one or several small nodules associated with chronic mastitis. They may also occur singly as an outstanding and prominent tumor of the breast. While usually benign, they may rarely show a change to sarcoma, a point which favors the view that the original pathology is seated in the connective tissue.

*Malignant tumors* of the fibrous zone consist of colloid cancer and sarcoma. The colloid cancer is a form of breast cancer which grows slowly and is of low-grade malignancy. They are mucoid or gelatinous in character and reach the largest



size of any breast tumor. Microscopically, they show small groups of cancer cells imbedded in a mass of mucoid fibrous tissue. Their exact origin is rather obscure, but some observers have found evidence that suggests a degenerative change in fibroadenoma of long standing. Radical mastectomy is indicated, and the results are quite satisfactory, with many complete cures.

The sarcomata arising from the connective tissue are comparatively rare. Their origin is in the periacinous connective tissue which Virchow compared to the appearance of a cabbage head. Mueller applied to this tumor the term *cysto-sarcoma proliferum phylloides*. The pericanicular proliferation projects into the dilated ducts and constitutes with the intracanicular excrescences, the proliferating masses. Glandular tissue is sometimes found in the tumor substance which has

grown around it, but is later removed by degeneration and pressure atrophy. These tumors are extremely malignant and metastasis usually occurs. Radiation affords the best method of relief, but the results are only palliative.

In all types of breast tumors the value of biopsy cannot be overestimated. It affords the operator the opportunity of having the report of the pathologist before him at the time and he is in a much better position to determine the logical procedure to follow. Many unnecessary mutilating operations may be avoided in the case of benign tumors which may be doubtful clinically. Likewise, malignancy is determined when present, even though the tumor may be very small, and the patient is afforded the benefit of the proper procedure at an early time. Many cures may be expected at this point when later the condition becomes hopeless.

## COURSE IN BACTERIOLOGICAL TECHNIC

*Division of Laboratories and Research, New York State Department of Health, Albany*

With the development of laboratory science, the need for well-trained technical workers has become increasingly evident. For the past twenty years, the Division of Laboratories and Research has made its resources available to certain grades of students for practical training.

The first regular course offered was given during the World War, in 1918. College graduates with the required background in physics, chemistry, and the biological sciences were accepted for a period of apprentice training combined with reading and study, at the completion of which they were placed in various "war laboratories" throughout the United States. The government found this instruction to be so valuable that, after the Armistice, the Federal Vocational Training Board, the War Department, and other governmental agencies continued to send students to the laboratory.

In 1929, the laboratory was approved by the Secretary of Labor as an institution of learning for immigrant students in accordance with the Immigrant Act of 1924, and hence is authorized to admit foreign students for special training. An applicant may enter the United States for stated periods on a nonquota immigration

visa for study here. The course received further commendation in 1930, when the Committee on Laboratory Service of Governor Roosevelt's State Health Commission reported: "Continuance of the present policy of providing technical training to qualified persons is recommended."

The training offered by the Division of Laboratories and Research is intended to enable properly qualified students to fit themselves for technical positions, especially in public health laboratories; the instruction given does, however, also include many of the methods used in clinical laboratories. The course covers a period of approximately two years. It is given at the central laboratory in Albany, and at the branch laboratory in New York City. There is no charge for tuition but, as students progress, their services are expected to become sufficiently valuable to compensate, to a considerable extent, for the instruction given. Standard methods for all the technical procedures are taught and the practical training is supplemented by reading and study. The museum and the bacterial collection afford opportunities for special study in the pathology of infectious disease. At the semimonthly seminar of the laboratory, the student is brought

in touch with scientific investigations and research work in this laboratory and elsewhere. Students with exceptional training may be permitted to enter the advanced phases of laboratory work and research.

The course begins with instruction for from sixteen to twenty-four weeks, in the preparation and sterilization of glassware and media. This training is fundamental to all work in the laboratory and is an essential part of the training of every bacteriologist. Some students who have not been able to complete the course or who have not been successful in learning the more difficult procedures in the diagnostic laboratories have become, nevertheless, quite proficient in this first step and thus are available for the more subordinate laboratory positions where the routine character of the work admits of the employment of assistants with less knowledge and training.

After completing the training in the preparation of media and glassware, the student devotes from three to six weeks to general bacteriological technic. In the diagnostic laboratories he spends at least forty-two weeks in the study of bacterial diagnosis, clinical pathology, and histological methods, and a minimum of sixteen weeks in the serodiagnosis group, where he is trained in the performance of the complement fixation test for syphilis. The laboratories for sanitary and analytical chemistry provide an eight-weeks' course in the bacteriological examination of water and milk.

By the apprenticeship method, the students gain much practical training as well as a knowledge of the fundamental principles underlying the various procedures performed. A list of students who have satisfactorily completed the course is available at the Division of Laboratories and Research.

### TOO VIOLENT TOOTHBRUSHING

That there can be too much of a good thing is shown by the fact that some people brush their teeth so hard that they injure them. Perfectly well-meant advertising has reached a point now where we cannot turn the pages of a magazine, sit in a street car, or pass a billboard, without being urged to brush our teeth. To most people the advice is beneficial, but a certain number of those who read the advertising are enthusiasts, with large, strong hands, who do everything thoroughly and when they go into action with the toothbrush and a large tube of toothpaste, it takes a good tooth to stand up under the attack.

Dr. Isador Hirschfeld, of the Columbia University Dental School, writes of this trouble in *Dental Items of Interest*. These individuals, it seems, go at their teeth with a long, brisk stroke as if they were cleaning the snow off the

sidewalk. They put a pressure on the brush that sometimes breaks the handle, and absent-mindedly do most of the brushing on one spot, denuding the roots of the teeth and forcing the bristles into the crevices. They "lacerate, abrade, or contuse the soft tissue, with resultant cleavage, detachment, or atrophy of the same."

One patient, a muscular young chauffeur, even injured his jaw in his misguided efforts, and a young lady of 30 confessed that she seized the brush in both hands, and used all the pressure at her command. Others selected the largest and hardest brushes obtainable, on the same principle used in buying scrub-brushes or currycombs. As many diseases enter the system because of unhealthy teeth, these habits may profitably engage the attention of the physician as well as the dental surgeon.

### FILTHY SCHOOL BOOKS

One unhappy result of reduced expenditures for educational purposes, remarks the *School Physicians' Bulletin*, is that thousands of children are using textbooks which have become not only unsightly but also unsanitary.

This was reported at a conference on better hygiene in handling books used in common in schools, held at the call of United States Commissioner of Education George F. Zook. Need of immediate attention to this problem was suggested to Commissioner Zook by prominent club women.

The useful life of an elementary school textbook, it was pointed out, is approximately three years.

The conference urged that the relatively small

outlay for textbooks and other material handled by children should not be reduced and that facilities for cleanliness of school children should be made ample.

While it was reported that studies undertaken to date fail to furnish positive proof of transmission of disease through common use of textbooks, the conference asked that school administrators put forth more efforts to prevent children with infectious diseases from being in school and to insure safer handling of books by children.

The Federal Office of Education was requested to prepare a circular on the supply and handling of textbooks for the information and guidance of school administrators and civic groups interested in the schools.

## NONOPERATIVE PHYSICAL MEASURES IN GYNECOLOGY

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Correct diagnosis and a knowledge of the underlying pathology are absolutely essential to a proper application of physical measures.

The constitutional inferior will react entirely differently to these measures in comparison with the normal woman. It is therefore necessary to consider the patient as a whole, the type of constitution and the extent of insult to the central and vegetative nervous systems as well as the endocrine and circulatory balance.

The inferior constitution manifests itself in maldevelopment, asthenia, and endocrine imbalance. Malnutrition, infectious diseases, child labor, and overstudy likewise prevent normal development. We have then the infantile uterus with amenorrhea, oligomenorrhea, sterility, habitual abortion, and early menopause.

The asthenic constitution, especially if the nervous systems be at fault, makes for lowered resistance. The poor posture, poor musculature, visceroptosis, and profound weakness with their train of ills as dyspepsia, constipation, colitis, dysmenorrhea, backache, and headache are all heightened by the asthenic nervous systems.

Endocrine imbalance is a common cause of ill health in women. In the last analysis, it is the ovary that makes for health or lack of it. Hyperfunction causes hemorrhages whatever the local cause. Dysfunction causes dysmenorrhea. Hypofunction makes for disturbances of menstruation and sterility.

**AMENORRHEA AND OLIGOMENORRHEA**—These conditions are amenable to physical therapy when due to anemia, endocrine imbalance, underdevelopment, and psychic disturbance as fear, worry, grief and fright and the arthritis of puberty and the menopause. A primary amenorrhea not corrected by the age of 25 is usually difficult to overcome.

In addition to the accepted dietary and medical measures and physical therapy in the form of rest, heliotherapy, phototherapy, hydrotherapy, exercise, and general body building, electrotherapy is indicated.

Locally, intrapelvic diathermy is used to cause hyperemia. A belt electrode encircles

the hips and a special electrode is placed in the vagina or rectum. Treatment is given twice or thrice weekly for two weeks before the expected period for about 35 to 45 minutes.

The treatment of choice is the stimulating static wave given from the negative pole for 15 minutes, abdominally, vaginally, or rectally.

When the static is not available, use the direct current with the negative pole in the vagina, cervix or rectum for 15 minutes with 20 ma. of current for 9 to 12 treatments. Either the sinusoidal or Morse wave giving forty to fifty interruptions per minute is employed for ten minutes to improve muscular tone.

**Phototherapy**—Infra red to the abdomen, 30 to 45 minutes, thrice weekly, in place of diathermy or on alternate days has been employed with benefit.

**Hydrotherapy**—In the form of sitz-baths, 60 to 70° F. for two to four minutes with friction to the abdomen or the warm sitz 98 to 104° F. for 15 to 30 minutes, depending on the case. Cold compresses of about 60° F. left on all night followed by a cold ablution in the morning are often of service.

**Exercises**—Exercises for general and local effect must be carefully prescribed and graded. They should begin with the simplest forms to help circulation and muscular tone. Nothing strenuous nor fatiguing. Frequent rests and relaxation are necessary.

**Massage**—General and local will be of great service, especially in the asthenic patient. Gentle stroking is best.

**LEUKORRHEA**—This is but a symptom of many conditions and can be treated properly only if the cause be found. It may be evidence of impaired local tone, due to circulatory disturbance and requires local treatment as well as attention to the cause.

Discharge arises chiefly from cervical infection, less often from the fundus, vulva, or anus, but rarely from the vagina. The vaginal discharge proper is thin, foamy, and yellow in color. When otherwise, infection has taken place from per-

saries or other foreign bodies, or other contamination. Cervical discharge is always thick, the uterine thin. A vaginal discharge may occasionally require a douche, but the other conditions are not effected by douching at all. In obstinate cervical discharge copper or zinc ionization is indicated as elsewhere described.

**VAGINISMUS.**—Although this is largely psychic, it can be very effectively helped with the static wave current. The technic of this treatment is especially important. No ground is used and a glass vacuum electrode is connected with the negative pole. At first a small rectal electrode is used and later graduated vaginal electrodes can be introduced. It has been found advantageous to have the patient insert the electrode herself and at each seance a larger one is given her. Manual examination should be avoided until the last visit. This final examination tends to convince the patient that the irritability is then under mental control. The rectal electrode used at first is cone-shaped at the end, widening out to  $\frac{1}{2}$  inch in diameter. Although not a gynecological condition, it is worth drawing attention to the original use of this electrode with the same technic in dilating the anus for the re-insertion of painful protruding hemorrhoids. Dr. Norman Titus originated this technic.

**HEMORRHAGES.**—In adolescence, general body building will usually remove the cause. In the menopause, having ruled out growths, attention to hygiene, general, mental, and physical is required. Physical therapy is of service in menorrhagia and metrorrhagia due to uterine and adnexal inflammation, subinvolution, or any condition giving rise to relaxed and patulous blood vessels of the pelvic viscera.

Intrapelvic diathermy for 35 to 45 minutes followed by the direct current with the positive pole in Douglas's cul-de-sac, the negative electrode on the abdomen, is employed for 10 to 15 minutes, 20 ma. thrice weekly. The positive pole will also exert a favorable influence on inflammation checking its further formation. The sinusoidal may follow the direct current for its toning effect but it is preferable if it can be combined with the diathermy. Heat therapy between periods may be employed to reduce any inflammation due to infection in the subacute and chronic forms. It may take the form of diathermy, Elliott's treatment, phototherapy, radiotherapy, etc.

**STERILITY.**—*Male sterility* is responsible for from 27 to 50 per cent of sterile marriages. Therefore, it is essential to rule out this condition before treatment of the wife alone is instituted. While gonorrhea is probably the most common cause, many others may be operative: parotitis and the chronic debilitating diseases such as nephritis, diabetes, tabes, alcoholism, and drug addictions are frequent. Neurasthenia, profound fatigue, worry, anxiety, and overwork are factors likewise found. These latter are amenable to tonic baths as a cabinet, Scotch douche, spray and shower, stimulating and sedative baths when indicated, general daily exercises, heliotherapy, aerotherapy, and the other upbuilding measures. Rest and relaxation are of prime importance. Diathermy and radiotherapy are also of service.

*Female Sterility.*—Blocked tubes, chronic cervicitis, pelvic inflammation, underdevelopment, etc., are among the chief causes of sterility.

Prolonged work, worry, shock, confinement indoors and lack of rest reduce the general metabolic activity causing profound fatigue. Decreased nutrition, obesity, any intoxication, malnutrition, and laziness are outstanding factors.

Pelvic inflammation of whatever nature must be corrected before testing for tubal patency. Radiotherapy, pelvic diathermy, prolonged douching, phototherapy, the hot sitz bath will be of service in all inflammatory conditions. Nongonococcal cervicitis may require ionization to clear up the discharge. In underdevelopment, general measures for building up must be instituted and, locally, pelvic diathermy 40 to 50 minutes for the tonic effect on the ovary and uterus, followed by the direct current with the negative pole in the cervix. When followed by the sinusoidal current for 10 to 15 minutes, muscular debility, circulatory and lymphatic stasis are favorably influenced.

#### ANOMALIES OF UTERINE POSITION

Marked *anteversion* is due to subinvolution and adhesions and causes frequent micturition and bearing-down pains. Relief is obtained by reducing the size of the organ and relieving tension due to adhesions.

Pelvic diathermy is followed by the static wave given rectally. The positive pole is connected to the patient, the spark gap begins at one inch and is gradually widened to tolerance. Never cause pain.

it is the rhythmic contractions that make for pelvic and systemic adjustment.

Marked *anteflexion* is congenital as is shown in the underdeveloped uterus which causes severe dysmenorrhea, backache, and abdominal colic. Oligomenorrhea with clotting is frequent.

General treatment is needed in this condition. Surgical curettment affords relief for varying periods. If the building-up process fails to relieve, dilatation and stimulation of the underdeveloped uterus by the negative pole of the direct current may be done preceded by pelvic diathermy for the effect on the ovary.

Acquired anteflexion requires treatment of the underlying parametritis. Here pelvic diathermy is the treatment of choice.

*Retroflexion* and *retroversion* with or without fixation of the uterus may be due to infection, subinvolution or an atonic condition of the pelvic muscles and ligaments. Resting upon the rectum it may be irritated by the feces and likewise cause constipation and hemorrhoids.

Intrapelvic diathermy is indicated followed by the static wave.

*Exercises*.—The knee chest position with its variations is most helpful in these conditions.

**DYSMENORRHEA**.—Painful menstruation may be primary with no demonstrable pelvic lesion or secondary due to any pelvic disturbance as malposition, tumors, or inflammation. Clinically we have endocrine, spasmodic, and congestive dysmenorrhea. The endocrine shows itself in a multiplicity of symptoms due to glandular dysfunction and the accompanying nervous irritability.

Spasmodic dysmenorrhea is that present in young girls and childless women with marked anteflexion and retroflexion. These may also show underdevelopment or neurasthenia.

The congestive type while present in pelvic inflammation, is especially common in those leading a sedentary life with its attendant constipation and those in whom sexual or marital disturbances make for instability.

Many cases of dysmenorrhea complain of nasal disturbance and when this is treated, dysmenorrhea is relieved. Cauterizing the "genital spots" of Fliess which are on the anterior portion of the inferior turbinate and the tuberculum nasi frequently clears up the cramps and severe pain. Test out with two drops of 10 per cent cocaine solution and one drop of

1:1000 adrenalin solution sprayed into the nose. After 10 minutes the turgid membrane shrinks and the pain is relieved sometimes 8 to 10 hours; sometimes for the entire period, sometimes completely. Repeated tests showing the same result call for cauterization or electrolysis. The most suitable cases are those with marked vasomotor and nervous disturbances who complain, after the period starts, of severe cramps, nausea, vomiting, abdominal discomfort, dizziness, and headache or migraine. This has been called "nasal dysmenorrhea" by Novak\*.

*General Treatment*.—In all cases of dysmenorrhea, measures for building up the patients' general condition play an important part. In addition to appropriate medication, this is best done by rest, dietary measures, sports and outdoor living, graded exercise, general hydrotherapy measures, phototherapy, etc.

Preventive medicine has a large place in the treatment of dysmenorrhea. When girls are brought up to realize that menstruation is a physiologic and not a pathologic process and that normal pursuits, exercise, and bathing are permissible at that time, we will have less need to resort to curative measures. Girls who have learned that it is not the sporting thing to be ill have gone a long way toward solving their problem and preventing "nerves."

To prevent dysmenorrhea as well as all other feminine ills, strictest attention should be paid in the formative years from 12 to 20 to the girl's mode of life. A correct posture must be insisted upon at all times. Healthful outdoor games for sport, not for records, graded exercises and proper rest and relaxation, thus assuring proper development and team work for the mental stimulation will help greatly. Not too strenuous nor heavy work should be undertaken at the period but ordinary pursuits and the usual gymnastic work may be continued.

Bathing is not only permissible but necessary. Sponges and showers certainly at first, though a bath pleasantly warm should be the rule rather than the exception from the second day on.

I know of no greater mistake than to permit girls to be excused from physical exercises at school or college "because these are just a waste of time." The girl suffers from this all her life, she loses the discipline of muscle and mind that should

\* Novak "Menstruation and Its Disorders," D. Appleton Co., 1922.

be the major part of her education and, if excused because of menstruation, a physiological process is thrust forcibly into the foreground of consciousness.

Acceptance of health, life and its processes with less discussion of its functions and then only with the medical adviser, will make for healthier and happier women.

Girls of an asthenic constitution will need much rest to regain lost tone, massage, carefully graded exercises instead of strenuous sports, much sleep, careful feeding, freedom from worry over work not well done and, above all things a cheerful disposition instead of the whining one so prevalent. Health may be achieved with care and patience.

*Local Treatment.*—Inflammatory disease of whatever origin will be found most amenable to local physical measures as will, also, congestion, stenosis, malpositions and ovarian dysfunction. Locally, at the onset of pain, hot compresses to the abdomen, warm douche, 110° F., or warm enema or a hot sitz bath, 105 to 110° F., or infra-red radiation from 30 to 60 minutes, may be of service.

In anticipation of the condition, however, electrotherapy may be instituted to correct the flexion and stenosis. Pelvic diathermy followed by the static wave will afford much relief. Use the direct current if the static is not available.

*INFECTION.*—The streptococcus, gonococcus, *coli communis* and diphtheroid bacillus are most often found. The neisserian is the most important as it is the commonest and most disabling of the infections. Dry heat in the form of radiotherapy, diathermy, Elliott's treatment and radiant and infra-red rays, continuous douches, sitz baths, etc., have been employed. Radiotherapy has been used locally in but a few cases in which there has been time to study it—the procedure is still in its infancy in this field—but so well have these reacted that it may well become the method of choice for those who can afford hospitalization and who are good risks.

*PELVIC INFLAMMATION* is usually due to infection which may manifest itself in exudate, adhesions or in displacement of the pelvic organs including intestines and omentum.

*CERVICITIS.*—Copper or zinc ionization is indicated depending upon the amount of

discharge and bleeding. For bleeding, use a copper sound as a positive pole, the large negative electrode to the abdomen. If the discharge be profuse and septic, use the zinc as the positive pole. The current is turned on very slowly, begin with 5, work up to 20 ma. for 15 minutes. In case of pain, reduce the current at once. Persistent pain means there is involvement of the ovaries or tubes requiring further examination to rule out surgical conditions.

*CERVICAL EROSIONS* may be treated at the same sitting with the zinc electrode, or the water cooled ultra-violet applicator applied directly to the cervix will induce healing. Several treatments clear up the discharge and all signs of the vulvovaginitis disappear as well.

After ionization one should wait two to three days to be sure any reaction has subsided. Repeat if needed. Rest in bed for the day of the treatment is desirable. Difficulty may be experienced in withdrawing the positive electrode from the cervix at first. Wait a few moments. If still adherent, turn off the current. Reverse the polarity. Turn on the current for two to three minutes up to 5 ma. The electrode can then be withdrawn easily. Should we wish to denude the cervix for any reason, the positive electrode may be withdrawn with slight force by turning off the current and waiting for a few minutes then turning the electrode gently to and fro to release. The bleeding is usually negligible, but in case of too much bleeding, a light packing of iodoform gauze may be inserted into the cervix with the usual aseptic precautions.

#### TECHNIC

Physical measures are used principally to relieve vascular and muscular spasm, to remove obstruction and promote drainage. To this end, the usual procedure is to first induce hyperemia thus causing a cellular response that manifests itself in chemical activity, change in secretion, and increased resistance.

In most of our cases the patients are in subnormal condition so that for the systemic effect we find it of advantage to give a general treatment by autocondensation, 300 to 600 ma. for 10-12 minutes, or general radiation with infra-red or radiant light before instituting other measures.

General ultra-violet radiation is of great value in all these cases, as is also the static. Hydrotherapy, massage, and exercise must

be carefully prescribed. Exercises of the simplest character, a few at a time, carefully rehearsed and graded will do much for upbuilding.

**Pelvic Diathermy**—In applying diathermy for pelvic inflammation the method of choice is the 3 inch belt around the hips as the directing electrode with the active electrode in the urethra, cervix, vagina, or rectum. Connected plates over the pelvis and the sacrum are used by many physical therapists instead of the belt. Diathermy is most effective if it is given in gradually augmented dosage increasing at 2 or 3-minute intervals until the required milli-ampere is reached. The reason for this is as follows: there is a gradual rise in temperature from the time the current is turned on until a certain height is reached, there is then a proportional drop to a probable optimum which is maintained for as long as the current is applied unless the patient grows restless when it rises slightly again.

It may take 4 to 6 minutes to reach the peak with a corresponding time to drop, so that unless a long treatment be given, the patient is not receiving the length of time specified nor the amount of current ordered. A long slowly arrived at maximum is best. When the current is turned on quickly and the peak reached quickly, the drop is proportionately rapid and much lower and the current slowly rises again. There is not the steady, sustained flow that seems most effective, and the patient does not bear high amperage so well (see experiments of Dr. Derow).

The vaginal electrodes are of several types, the Chapin, Cherry, Cumberbatch, Corbus and O'Connor, Derow, etc. Derow has modified the usual aluminum electrode so that it is serviceable in several ways. It is in two sizes, for the nullipara and multipara. It has been broadened out with a shallow curve that insures dispersion of the necessary heat through the cervix, uterus, and adnexa. It has been hollowed out for two thermometers one for a direct reading from the central axis and a side opening for the indirect. Most important is that it may be used interchangeably and even simultaneously for diathermy and the direct current or sinusoidal.

The aluminum may be copper-plated and this may be amalgamated with mercury as follows: make up a solution of nitric acid  $\frac{1}{4}$ , water  $\frac{3}{4}$ , and a few drops of metallic

mercury. Dip the electrode in this and it will have a coating that is antiseptic, less astringent than copper or aluminum, and that does not stick. Sterilization is unnecessary as a new plating is applied before each treatment and no lubricant is required.

**Technic of Dr. Hamich Wolf**—By this method the patient sits on a chair, the perineum resting on a saline soaked towel which is placed on a sheet of block tin accurately molded to fit the part. The directing electrode is a belt around the waist. The patient controls the current which is gradually increased to tolerance and then maintained for thirty minutes.

**DIATHERMY IN GONOCOCCAL URETHRITIS AND CERVICITIS** *The Cumberbatch Method*—The belt electrode is of block tin 3 inches wide to be placed around the hips. The urethral electrode consists of a rod 6 inches long,  $\frac{3}{16}$  inch in diameter. The end for urethral insertion is  $1\frac{1}{2}$  inches long, an ebonite disk 1 inch in diameter, marking the length to prevent entrance into the bladder. The outer end of the urethral electrode is attached to a stand placed between the thighs and connected to the diathermy machine. The stand prevents strain or pressure on the urethra which is most important. A thermometer may be inserted in the electrode to record the temperature.

The cervical electrode is made of tin to permit easy insertion at any degree of flexion or version required. It is covered almost its entire length of 12 inches by rubber tubing except the  $\frac{3}{4}$  of an inch of the cervical end.

The urethral electrode is inserted into the urethra up to the disk and supported by the stand. The belt electrode of block tin 3 inches wide is placed around the hips on a level with the urethra. The current is gently turned on and gradually increased until the patient can just bear no more—the heat is being replaced by pain. The current is slowly reduced until only the heat is sensed. This is maintained for 10 minutes. *Note the amount of current.* Pain is felt usually between  $114^{\circ}$  and  $115^{\circ}$  F. In many patients it is complained of before this figure is reached, to tolerance only is the rule, whatever the temperature.

The cervical electrode is inserted into the cervix for  $\frac{3}{4}$  inch and attached to the stand, care being taken to cause as little pain as possible. The current is slowly turned on until one half the amount used

in the urethra registers. The cervix is insensitive to heat, and only the same intensity of current is used as in the urethra, the cervix being one-half the length of the latter. The current flows for 10 minutes.

In case of pain in the tubes or ovaries, diathermy with the intravaginal electrode precedes this treatment for 30 minutes. Usually 6 to 10 treatments are required depending upon the regularity of the patient's visits and her care at home.

Frequent examinations one or two days after menstruation for 3 to 5 periods are necessary after the completion of the treatment which is usually given twice or thrice weekly until 6 to 9 are given. Examination should include the ducts of Skene as well as the urethra and the glands of Bartholin as well as the cervix and vagina. A course may have to be repeated, most certainly if reinfection has taken place. If Skene's ducts and the Bartholin glands are harboring a nidus they may be cauterized to shorten procedures.

*The Corbus and O'Connor Method.*—A cervical temperature of 116° to 117° F. is operative for 30 to 40 minutes in these cases for a complete eradication of the gonococcus. Five negative smears following a course of treatments must be made. Treatments are given about once in 7 to 10 days and vary from 1 to 14—four to seven being the average. This method is especially applicable in cases of cervicitis.

Arthritis that does not yield to ordinary treatment of the joints frequently is relieved by treating the original site of infection as the urethra or cervix first. If then the urethral and cervical condition is cleared up, the joints may be treated, if needed, later. Some cases of sciatica and neuritis have likewise cleared up under the Cumberbatch treatment.

Experience at the Vanderbilt Clinic has shown that diathermy by the Cumberbatch method is superior to other forms of treatment in acute and chronic neisserian infection and its sequelae.

**HYDROTHERAPY IN GYNECOLOGY.**—Hydrotherapeutic measures have always enjoyed a large measure of popularity in gynecology in the form of vaginal douches, enemata, sitz baths, compresses, packs, and the usual general baths and their modifications.

It is surprising how little is really comprehended when the order for these measures is given. Douches in the upright

position have been taken for years by patients who announce very firmly they have not been otherwise instructed. Hot baths are taken indiscriminately where tepid or cold are indicated. Water in any form has been taboo in menstruation and this may be the rock on which treatment will split if a determined mother, grandmother, friend, or neighbor has a more persuasive personality than the physician however well armed with science and common sense.

A prescription written out and explained in the minutest detail is absolutely essential and a check up of procedure more so. It may be necessary to direct or give personally the treatment at first.

Do not take for granted the knowledge of the attendant unless cognizant of her training and character. Failure is the rule rather than the exception with the woman patient who is too ill or nervous or bothered or lazy "to submit to all that nuisance that everybody knows and does." The usual complaint is "I've done all that and it never helped."

When it is considered that excessive hot douching frequently causes or increases leukorrhea, the point in this regard may be well taken. Hence the need for direction as to *why* and *how* and particularly *when* and *how often* a douche should be taken. Repetition depends here as in general upon the effect of the initial procedure.

*The Vaginal Douche.*—This is the commonest of hydrotherapy measures, the most abused and least understood. Its indiscriminate and too frequent use is to be condemned. It must always be taken lying down and never unless this position can be maintained for at least 20 to 30 or more minutes. It is useless to run in quickly several quarts of water or to force them in while in the sitting position. A long, warm douche, slowly flowing from a height not greater than 12 to 15 inches above the patient's pelvis will help materially to increase her comfort and allay her inflammation and pain. The temperature may be raised from 98° to 110° to 115° F. depending on the pathology and may be given in amounts varying from 3 quarts to 5 gallons, daily or twice or thrice weekly as indicated. Protect the vulva and perineum with vaselin and thick towels or use a special speculum.

The douche is preferably taken at bedtime or when complete rest for the quite relaxed organs may be assured. If a



strained position is assumed either on the douche pan or in the tub, little good will be done and much complaint of the fatigue, backache, and general discomfort. A pile of newspapers or a firm pillow covered with rubber or oil cloth, a pillow at the back and the feet supported will obviate this. The bathroom should be quite warm and a covering should be arranged over the tub—a heavy quilt generally—to prevent taking cold.

The continuous douche is used for inflammation, especially chronic, pain, and hemorrhage. If medication is added it is usually an antiseptic as chlorazene, lysol, tincture of green soap, lactic and boracic acid, etc. Soda bicarbonate is frequently used, especially to dissolve mucus and allay pruritus. No strong medicaments, such as bichloride of mercury or carbolic, should be allowed for obvious reasons.

A soda bicarbonate douche is frequently used to temporarily neutralize vaginal acidity in sterility. Astringents, such as zinc or copper sulphate, 2 drams to one quart, tannic acid,  $\frac{1}{2}$  dram to one quart, or liquor aluminii acetici,  $\frac{1}{2}$  dram to one quart, have a wide vogue.

Proper cleansing of the douche apparatus must be impressed upon the patient. The nozzle, preferably of glass, should be boiled before and after using. The metal irrigating can is superior to the rubber bag. Boiling in a bag is safest, the whole being allowed to dry and kept ready for use to prevent contamination.

**Baths.**—These have a decided place in the general upbuilding of the nervous, neurasthenic, anemic, asthenic patient. Girls and women must be taught the use of the warm, hot, cool, and cold bath, wet packs, sponges, and showers.

The warm bath about 98° to 100° F. is especially indicated in the asthenic and neurasthenic patient at night for its sedative and soporific effect. The hot bath with the temperature increased from 98° to 104° F. for 5 minutes followed by the warm pack until free perspiration is induced is excellent for the anemic patient. The salt glow as practiced at Battle Creek is particularly stimulating.

Cool and cold baths, sponges, showers, and packs are best given in the morning. The neurasthenic, anemic patient responds well to these if they be given tactfully and properly, no matter what the initial objection may be. Begin first with the cool sponge, then the dry pack until warm, with

friction preferably, then rest. Cold baths with friction are excellent for obese patients who are spurred to renewed exertion and in those at the menopause especial benefit is claimed.

Rest and relaxation should give a good reaction after these measures, and they may then be continued.

**The Sitz Bath.**—The warm sitz bath is given at a temperature of 98° to 104° F. usually for 10 to 30 minutes. It is excellent as a sedative, to relieve spasm and cramp, to allay inflammation, to favor absorption of exudates, to increase blood supply, relieve congestion. It is therefore indicated in amenorrhea, oligomenorrhea, dysmenorrhea, backache, leukorrhea, pelvic inflammations, etc. The hot sitz, temperature 104° to 110° F. is for more decided action. The temperature must be raised gradually and care must be taken to prevent chilling.

**Cold Compresses.**—These are excellent in all acute inflammation especially where pain is complained of, hemorrhage and infections are especial indications, 40° to 50° to 60° F. may be used, depending upon the tolerance of the patient. Warm and hot compresses may be used for dysmenorrhea, amenorrhea, exudation, etc., where the sitz bath cannot be taken; 98° to 104° to 110° F. is the temperature, depending on the severity of the lesion. These compresses may be kept on for hours at a time.

#### CONCLUSIONS

1. Be sure of the diagnosis.
2. Treat the patient, not the condition alone.
3. Give the treatment long enough to do some good.
4. Give explicit directions for home treatment, exercises, hydrotherapy, etc., and see they are carried out.
5. Diathermy is not a cure-all, but is of particular value in gynecology. It is the method of choice in acute and chronic neisserian infection and its sequelae for clinic and office practice.
6. When muscular stimulation is wanted, the static wave current is the method of choice. The slow sinusoidal current can be expected to bring about somewhat comparable effects. However, the latter does not have the accompanying decongestive action which is essential.
7. Galvanism has its greatest field of usefulness in gynecology.

## HOUSE OF DELEGATES

## MINUTES OF THE ANNUAL MEETING

May 14 and 15, 1934

The 128th Annual Meeting of the House of Delegates of the Medical Society of the State of New York was held at the Hotel Utica, Utica, New York, on Monday, May 14, 1934 at 10 A. M.

Dr. Samuel J. Kopetzky, Speaker; Dr. Daniel S. Dougherty, Secretary.

THE SPEAKER: The House of Delegates will please come to order.

## 1. COMMITTEE ON CREDENTIALS

THE SPEAKER: The first order of business is the report of the Committee on Credentials.

THE SECRETARY: The Committee on Credentials finds no disputed delegations, and all those whose names are on our roll are entitled to vote.

THE SPEAKER: The next order of business is calling the roll.

THE SECRETARY called the roll by counties.

THE SPEAKER: A quorum being present, we will proceed with the business of the House.

## 2. APPROVAL OF THE MINUTES

THE SPEAKER: The first order of business is the reading of the minutes of the previous meeting.

THE SECRETARY: As these minutes have been published, I move that the reading be dispensed with and that they be adopted as published in the May 1st, 1933 issue of the NEW YORK STATE JOURNAL OF MEDICINE, page 581.

Motion seconded and carried.

## 3. REFERENCE COMMITTEES

THE SPEAKER: The Secretary will now announce the Reference Committees.

The secretary read the following Reference Committees:

REFERENCE COMMITTEE ON REPORT OF THE  
PRESIDENT

John J. Buettner, *Chairman*, Onondaga  
Albert A. Gartner, Erie  
Samuel M. Kaufman, New York  
Edgar A. Vander Veer, Albany  
Warren Wooden, Monroe

REFERENCE COMMITTEE ON REPORT OF SECRETARY,  
COUNCIL AND COUNCILLORS

William A. Krieger, *Chairman*, Dutchess-Putnam  
Louis F. Garben, Suffolk  
H. P. Mencken, Queens  
John T. Donovan, Erie  
John E. Jennings, Kings

REFERENCE COMMITTEE ON REPORT OF TREASURER  
AND TRUSTEES

Walter T. Dannreuther, *Chairman*, New York  
J. Lewis Amster, Bronx  
James H. Donnelly, Erie  
Murray B. Gordon, Kings  
Edward T. Wentworth, Monroe

REFERENCE COMMITTEE ON REPORT OF LEGAL  
COUNSEL

George A. Leitner, *Chairman*, Rockland

William A. MacVay, Monroe  
Augustus J. Hambrook, Rensselaer  
George S. Towne, Saratoga  
Wilbur G. Fish, Tompkins

REFERENCE COMMITTEE ON REPORT OF COMMITTEE  
ON PUBLIC RELATIONS

Denver W. Vickers, *Chairman*, Washington  
William J. Doerfler, Westchester  
Luther C. Payne, Sullivan  
Louis A. Friedman, Bronx  
Alfred E. Shipley, Kings

REFERENCE COMMITTEE ON REPORT OF COMMITTEE  
ON PUBLIC HEALTH AND MEDICAL EDUCATION

George R. Critchlow, *Chairman*, Erie  
Walter D. Ludlum, Kings  
Franklin Walker, New York  
George M. Fisher, Oneida  
W. Grant Cooper, St. Lawrence

REFERENCE COMMITTEE ON REPORT OF COMMITTEE  
ON LEGISLATION

John J. Masterson, *Chairman*, Kings  
Frederic W. Holcomb, Ulster  
Edward R. Cuniffe, Bronx  
Robert E. DeCe, Erie  
Terry M. Townsend, New York

REFERENCE COMMITTEE ON REPORT OF COMMITTEE  
ON SCIENTIFIC WORK AND ARRANGEMENTS

Arthur F. Heyl, *Chairman*, Westchester  
Nathan Ratnoff, New York  
Harold J. Harris, Essex  
Clarence V. Costello, Monroe  
David W. Beard, Schoharie

REFERENCE COMMITTEE ON REPORT OF COMMITTEE  
ON ECONOMICS

James F. Rooney, *Chairman*, Albany  
Charles C. Trembley, Franklin  
Robert B. Hammond, Westchester  
Howard W. Davis, Broome  
David J. Kaliski, New York

## REFERENCE COMMITTEE ON NEW BUSINESS A

Edward C. Podvin, *Chairman*, Bronx  
Carl Boettiger, Queens  
C. Knight Deyo, Dutchess-Putnam  
Leo F. Schiff, Clinton  
James W. Sweet, New York

## REFERENCE COMMITTEE ON NEW BUSINESS B

Luther F. Warren, *Chairman*, Kings  
Reeve B. Howland, Chemung  
DeForest W. Buckmaster, Chautauqua  
Adolph G. DeSanctis, New York  
Romeo Roberts, Westchester

## REFERENCE COMMITTEE ON NEW BUSINESS C

B. Wallace Hamilton, *Chairman*, New York  
Edward A. Sharp, Erie  
William Howard, Albany  
George C. Vogt, Broome  
James W. Bulmer, Nassau

## CREDENTIALS

Daniel S. Dougherty, *Chairman*, New York  
Peter Irving, New York.

THE SECRETARY I move that the reports of the officers and committees be sent to the Reference Committees as printed, without reading

Motion seconded and carried

THE SPEAKER If any of the officers or committee chairmen have supplementary reports to present I take pleasure in extending them the privilege of the floor

#### 4 SUPPLEMENTARY REPORT OF THE TREASURER

##### Section 38

DR SODERN *Gentlemen of the House* As customary, your Treasurer has made the usual report to the Board of Trustees and it has been published in approved form I ask for the privilege of a few words concerning it Additional details will be furnished to your Reference Committee so that they may be conversant with any complete portion of it that they wish I would like to say a few words to you at this time relative to your war chest

Through the wisdom of your past action you have been fortunate in accumulating a sizable war chest It has been well conserved by your Trustees, but I would like to urge on you the necessity to increase this fund We are in troublesome times For example, you may be called upon at any time to oppose legally, such a thing as the corporate practice of medicine and if so, it will necessitate the expenditure of a considerable amount of money

You may wish to make studies similar to those recently made in Michigan that cost \$15,000 or \$20,000, more than the entire dues of the Society for the year Therefore, I would like to urge upon you again to maintain, and, if possible, increase this fund

Through the wisdom of this House you have accomplished a considerable economy, which is not apparent in the 1933 Treasurer's Report You will recall that for 1933 the total cost of the STATE JOURNAL was \$18,915 or approximately \$19,000 That was made up by the allocation of one dollar per member per year and a deficit of \$6,218

With the changes that you have made that account this year will read about as follows

Allocation for cost of producing the JOURNAL, fifty cents per member amounting on the basis of last year's membership to \$6,348

On a four and one half months' experience we find that the expenses of your Journal Management Committee can probably be covered by an additional twenty five cents per member, amounting to \$3,174 or making a total cost for the JOURNAL of \$9,522 and a saving over last year of approximately \$10,000

I have no doubt but that a careful consideration of the entire matter of expenditures will lead to additional savings, but let your retiring Treasurer impress this on you, keep your war chest in order for safety and protection

THE SPEAKER We are now ready to hear the address of the President

DR. FLAHERTY *Mr Chairman and members of the House of Delegates* The address of the President will be read tomorrow evening but I am glad to meet you this morning and receive your hearty welcome I feel I hardly deserve it However, I am delighted to see such a large group of men present It is a forecast of a good meeting

THE SPEAKER Gentlemen, I now take pleasure in presenting the President elect

#### 5 ADDRESS OF PRESIDENT ELLECT

##### Section 56

DR BEDALL *Mr Speaker and members of the House of Delegates* It is with a deep sense of gratitude and appreciation that I address you this morning

Your expression of faith by electing me your President I take as an indication of your willingness to cooperate, and for this I am indeed thankful When I consider the contending forces which are at work to weaken or destroy the practice of medicine, I am conscious of my responsibility

I pledge my allegiance to the constitution of the Medical Society of the State of New York and especially, to extend medical knowledge and advance medical science, to elevate the standard of medical education, to secure the enactment and enforcement of just medical and public health laws, to promote friendly intercourse among physicians, to guard and foster the material interest of its members, and to protect them against imposition, and to enlighten and direct public opinion in regard to the problems of medicine and public health

The height to which the lofty aims of our Society may rise depends upon the efforts of every member We are in the midst of clashing factions There are some who gaze into the distance and see visions of few obligations, little work and much pay They, I fear, are deluded by fantastic dreams

The sessions of the House of Delegates will give all an opportunity to express themselves and in the end I trust that the majority will rule against further experimentation in the practice of medicine There is no question in my mind but that the socialization of medicine eventually means the death of the patient

There are no reasons why the profession of medicine should change its established order because of a temporary depression from which we will emerge if only given a chance The basic underlying economic unit of our State is the home The relations of this group have not changed, nor have the essential elements of religious life Why then should the contacts with the sacredness of home medical service be altered?

The voices of the propagandists have been heard throughout the land Their words are the same and their thoughts identical There is a constant repetition of the need of some plan, that medicine must care for those who are sick, that doctors must be more equitably distributed, and that hospital and specialized service must be more readily accessible These futile arguments are advanced at a time when a patient can reach a physician's office or have the physician come to his home more quickly than at any time in the history of this country

I cannot agree with those who say that it is better to go somewhere than to stand still I cannot see the logic of a program which is not based on the economic satisfaction of those who are to work under it Nor do I feel that the appointment of another committee in our already top heavy organization will assist in any material way to solve the national economic riddle or the problems connected with the practice of medicine which are as all broad minded observers agree, mainly dependent upon unemployment

There is no doubt in my mind that we will do more harm than good by aligning ourselves with

the forces bent upon the destruction of the present system of private practice.

I know that each of you will display your usual wisdom after acquiring a complete knowledge of the uncertainties surrounding the introduction of any change in the practice of medicine.

Regardless of any printed statement for or against the inauguration of a new system, the fact is incontrovertible that the main object of group medicine is to tie the employee to the employer.

I urge you to avoid entangling alliances and feel certain that you will not prove false to your true selves or to your constituency by accepting any resolution or procedure presented in any guise whatsoever which will change the order of the established practice until the proposed change has been thoroughly investigated and proven by actual operation to be worthy of your acceptance.

Let us constantly guard against the insidious ingrowth of socialized service of any type. Let us scrutinize every group insurance and hospitalization scheme so as to be convinced that the patient's welfare is protected and that the sick of our State are not subjected to exploitation. Incidentally do not forget that as a result of the national government's extension and too expansive private hospital construction so unfortunately advanced by propagandists, the medical profession may be further victimized.

Whenever you come in contact with those who are advocating a new system, I suggest that you inquire into the personal relationship of the proponent to the proposed measure to the end that you may see why he is trying to foist a method of unsatisfactory, unknown, unreliable medical service upon the unsuspecting and gullible public.

Very few physicians would be content to mechanically dole out pills and mechanically give advice and even more mechanically live the life of a hired servant. There is something more noble, more exalted, more satisfying and more worthy of the true physician than just the mere serving of time for a pittance.

May the experience of the ages be with you in your deliberations.

The State Society has too many committees. They are too loosely connected to the parent organization, usurp too many functions, publish too many opinions which have not been passed upon by the legislative bodies of the Society and are, I believe, tending to retard our natural progress, for no emergency is sufficiently acute to require an immediate decision by one man or one committee.

I believe that there should be a change in the personnel of all the committees of this Society by the infusion of new blood; that is, one of the older members of the committee should be displaced by a new one. In this way we will be educating the younger men in the Society to take their part in its trained interest. I, therefore recommend to the House of Delegates that they pass a resolution to this effect.

Gentlemen of the House, I believe it should be clearly stated by you that no member of a committee should be permitted to address any organization on a subject under consideration by his committee without the consent of the Executive Committee.

The reports of the officers of the Society evidence careful, efficient, and constructive management. I wish particularly to stress the change

in appearance of the STATE JOURNAL and trust that during the next year even greater advance will be made to the end that the views of our State organization and its members will be clearly expressed.

I further suggest that each delegate act as a direct personal inspiration to his County Society in stimulating a greater interest in the JOURNAL. That a digest of the County Society activities be sent to the editor, that any gross infringement of law be reported, and that in every way the County Society be impressed with the necessity of maintaining a superior journal.

All of the members of our Society should work harder in their chosen profession to accept the new discoveries that are proven worthwhile, to discard old methods which have ceased to fulfill their expectations and to give the public the benefit of their constant study and experience.

When I hear so much about the old-fashioned general practitioner, I am chagrined, for there is not a member of this Society who would like to be classed in the group of men who did wonderfully well with the knowledge of fifty years ago, but who would now be considered woefully incompetent. And, gentlemen, do not forget that the propagandist wishes to have you laud the old-fashioned family practitioner so that after you have raised him on a high pedestal, the column may be smashed and the idol crumble in the dust and from that dust the destroyers wish to have socialized medicine arise.

Now, Gentlemen of the House, I ask your wholehearted support to the end that our State Society may assume a larger rôle in the protection of the health of the people of the state.

THE SPEAKER: Referred to Reference Committee on the Report of the President.

New Business:

THE SPEAKER: We will now proceed to New Business. Is there anything before the House?

## 6. OSTEOPATHY

### Section 57

DR. VAN ETEN, of Bronx: WHEREAS, Osteopathy is a system of treating disease wherein drugs are not used, and

WHEREAS, in the training of osteopaths in the State of New York, the use, nature, and action of drugs is not taught, and

WHEREAS, there is a Bill, Assembly Int. 2118, print 2443, which has passed both Houses of the State Legislature and is now before the Governor, therefore, be it

RESOLVED, that the House of Delegates of the Medical Society of the State of New York, hereby express its concern for the public welfare, should this Bill become a law, and be it further

RESOLVED, that this House of Delegates communicate its concern to His Excellency, the Governor, and inform him of the dangers of permitting unqualified men, who have not the educational requirements established by the regents of the State of New York for those who prescribe drugs and, therefore, respectfully request the Governor to veto this bill in the interest of the public.

THE SPEAKER: Referred to Reference Committee on Report of the Committee on Legislation.

## 7. MALPRACTICE DEFENSE AND GROUP INSURANCE

### Section 37

DR. HEYD, of New York: Except for some

small recessions in the years 1925, 1926, and 1931, the cost of malpractice indemnity and defense in New York State has steadily increased since the close of the war. There are probably numerous factors responsible for the rise in cost, some of which, such as the tendency of juries to award larger and larger verdicts, lie beyond the power of the Society and its members to control. Other factors, however, are to a large extent controllable and it is to these that the members of this organization must direct their energetic attention if continually increasing insurance rates are to be prevented.

It is of first importance that members have in mind the fact that every dollar paid out for malpractice suits and claims in this State comes from funds supplied by the members and which the members are required to replace. Thus a suit against any individual member is a suit against all members and each suit filed should be so regarded.

Malpractice insurance rates cannot be reduced, in fact it appears certain that they cannot be held at their present level unless both the number and cost of suits and claims can be reduced.

WHEREAS, it is apparent that the incidence of malpractice is constantly rising for the members of the Medical Society of the State of New York, and

WHEREAS the cost of malpractice actions must be met by the premiums and membership dues paid by the members, and

WHEREAS, the present trend of malpractice actions render it highly probable that the basic rate for malpractice insurance shall have to be increased, and

WHEREAS, malpractice cases are largely the result of too free suggestions by physicians, by critical and careless remarks by consulting physicians to patients therefore, be it

RESOLVED, that it shall be the policy of the Medical Society of the State of New York

(1) That no member shall give any opinion on the diagnosis made or treatment given by any other doctor, whether a member of the Society, or not, until he has accurately informed himself as to the exact circumstances as they existed at the time the diagnosis was made or the treatment given and then only when statements which may be considered as disparagement of others, are necessary to the proper care and information of the patient

(2) That members shall be ready at all times to render every proper assistance in the defense of suits and claims against other members

(3) That all members shall, whenever possible, use their best influence to discourage or prevent suits or claims against members except where in their best judgment such suits or claims are founded in fact upon injury to patients caused by clear negligence.

(4) That no member of this Society shall make a charge or receive any compensation for his services based upon the outcome of any malpractice suit or claim in which he shall appear as witness

(5) That the House of Delegates empower the President to appoint a Committee for the express purpose of devising ways and means of counteracting the number of malpractice suits against members of the Society

(6) It is suggested that the Committee consider the setting up of a special malpractice counsel group in each County Society for the following purposes

(a) To interview doctors, members of the local County Society, who are actually or potentially engaged in any malpractice suits either for the plaintiff or defendant

(b) To determine the animus and reasons why the said member is in litigation and seek to promulgate and recreate high professional standards of honor and integrity in regard to colleagues in the Society

THE SPEAKER Referred to Reference Committee on New Business A

## 8 FEDERAL COMPENSATION BUREAU—CHOICE OF PHYSICIANS

### Section 53

DR HEYD, of New York. WHEREAS, the procedures established by the Federal Works Administration are inimical to the best interests of the doctor as the Federal Compensation Bureau have refused any form of free choice of physicians

WHEREAS, the doctors are citizens as other members of the community they should not be discriminated against in the matter of their professional work, be it

RESOLVED, therefore, that the House of Delegates instruct its Delegates to the American Medical Association to present the views of this House to the American Medical Association so that there may be established a united policy which will justly and adequately protect the physician

THE SPEAKER Referred to Reference Committee on New Business B

## 9 WORKMEN'S COMPENSATION ARBITRATION BUREAU

### Section 42

DR HEYD, of New York. WHEREAS, each constituent County Medical Society of the Medical Society of the State of New York sets up a different procedure for the adjudication of cases that come under the Workmen's Compensation Act, and

WHEREAS, it is apparent that each County cannot afford the necessary expenses incident to the creation of an arbitration tribunal, and

WHEREAS, it is highly important that the Medical Society of the State of New York should sponsor and further the idea of arbitration in cases of dispute under the Workmen's Compensation Act, be it

RESOLVED, that the House of Delegates instruct the Executive Committee to set up a Bureau of Compensation Arbitration for the State of New York with regional branches, and further to allocate the costs of the service

To create thereby the precedent of the Medical Society of the State of New York handling Workmen's Compensation Insurance problems

THE SPEAKER Referred to Reference Committee on New Business C

## 10 AMENDMENT TO BY-LAWS

DR HEYD, of New York. Amend the By Laws, Chapter II, Section 1, seventh line, by deleting the words "With voice but without vote"

THE SPEAKER The amendment will lie over for one year

## 11 COMMITTEE ON LEGISLATION MEETINGS EVERY OTHER WEEK

### Section 60

DR DOUGHERTY, of New York. In order that the legislative work of the Society may receive

proper consideration and supervision and not be left to the judgment of a single individual, no matter how competent, the Secretary recommends that the Committee on Legislation be instructed to meet every other week during the session of the Legislature and as often in addition as its Chairman may deem necessary.

THE SPEAKER: Referred to Reference Committee on Report of the Committee on Legislation.

## 12. LOCATIONS FOR DOCTORS BEGINNING PRACTICE

### Section 34

DR. PODVIN, of Bronx: WHEREAS, the officers of County Societies are often called upon to assist doctors in the matter of selecting a place to begin practice, or those desiring to make a change in their present location, and

WHEREAS, it is impossible for the County Societies to furnish such information to their members, be it

RESOLVED, that a special Committee be appointed to secure any available information possible, for this purpose, and be it further

RESOLVED, that a report of said Committee be published from time to time in the STATE JOURNAL.

THE SPEAKER: Referred to the Reference Committee on New Business A.

## 13. REMITTING OF DUES

### Section 50

DR. PODVIN, of Bronx: WHEREAS, it is the practice of County Societies to continue on their roll of membership certain members who are financially unable to pay the regular dues, and

WHEREAS, it is required that the local society remit the amount of ten dollars for each such member to the State Society, and

WHEREAS, this causes a severe strain on the finances of the County Society, be it

RESOLVED, that on the certification of the President and Treasurer of a County Society the State dues for such member be remitted, and be it further

RESOLVED, that the number of members thus excused from paying dues shall not exceed five per cent of the number of members in good standing of said County Society, and be it further

RESOLVED, that each member whose dues are thus remitted shall sign an agreement to pay back to the State Society the amount due as soon as he is in funds.

THE SPEAKER: Referred to Reference Committee on New Business B.

## 14. SOCIETY OFFICES

### Section 41

DR. PODVIN, of Bronx: WHEREAS, the offices of the State Society in New York City are in a very inaccessible location, and

WHEREAS, the journey to said offices either for out-of-town members or those living within the city of New York is thus made unnecessarily tedious, be it

RESOLVED, that the Board of Trustees or Council be requested to secure a more central location for the State offices at the expiration of the present lease.

THE SPEAKER: Referred to Reference Committee on New Business C.

## 15. X-RAY LABORATORIES

### Section 46

DR. PODVIN, of Bronx: WHEREAS, the making of a diagnosis by means of the x-rays and/or the administration of x-rays, radium or other radiant energy for treatment, or methods of diagnostic or therapeutic medical practice, and

WHEREAS, the Medical Practice Act makes the diagnosing and/or treatment of disease unlawful for anyone not duly licensed to practice medicine, and

WHEREAS, during the past ten years or more lay persons and lay organizations have established and are conducting x-ray laboratories in which lay persons are examining and/or treating patients by means of x-rays, and

WHEREAS, such lay persons are not properly qualified and are not subject to effective supervision or control, and

WHEREAS, the x-rays in the hands of inexperienced and/or irresponsible persons are in themselves a potential source of injury to the patient, and

WHEREAS, in addition to these dangers x-ray diagnosis frequently requires the administration of potent drugs or chemicals which may be legally administered only by licensed physicians, and

WHEREAS, under these conditions the lay x-ray operator and the commercial x-ray laboratories constitute a menace to the public and in addition are strictly commercial enterprises conducted by business getters who are actuated by the profit motive and who consequently do not feel themselves bound by the rules of medical ethics, but who resort to all sorts of questionable methods to attract a complaisant clientele, and

WHEREAS, by the employment of solicitors, runners and/or other business agents and by the promise of rebates or of favorable or dishonest diagnoses, obtain the patronage of unscrupulous physicians or of business and industrial organizations to the detriment of the patient, and

WHEREAS, because of their illegal activities and the desire for profit they have been unable to attract competent physicians adequately trained in radiology and as a result employ the services of individuals whose education, training, and character are unacceptable to right thinking members of the medical profession or to the American Medical Association, and

WHEREAS, the technical diagnostic and therapeutic advances being made in radiology are due to, and dependent upon, properly trained physicians to whom science must look for further progress in the field of Radiology, and

WHEREAS, the lay x-ray technicians and laboratories have so encroached upon the practice of radiology that competent and ethical medical practitioners find it more and more unattractive as a field of endeavor, thus endangering the progress and advancement of the science of radiology and the welfare of the public, be it therefore

RESOLVED, that the House of Delegates in convention assembled believes that the practice of Radiology whether for diagnostic or therapeutic purposes, constitutes in fact the practice of medicine; and, be it further

RESOLVED, that the properly constituted authorities be called upon to take the requisite steps to bar all persons not licensed to practice medicine in the State of New York from the practice of radiology; and be it further

RESOLVED, that if it is the opinion of the Attorney-General that nonmedical technicians, practicing radiology are not violating the law under present conditions, such steps be taken to institute legislation which will include radiology in the practice of medicine and to limit diagnostic or therapeutic x-ray work to duly licensed physicians or dentists, and be it further

RESOLVED, that our delegates from New York to the American Medical Association be instructed to bring their matter to the attention of the House of Delegates of the American Medical Association at the impending session

THE SPEAKER Referred to Reference Committee on New Business C

## 16 MEMBER IN GOOD STANDING

### Section 33

DR JOACHIM, of Kings WHEREAS, the definition of member in good standing is surrounded by some doubt insofar as it applies to the benefits derived by membership in the Society in the group liability insurance, therefore, be it

RESOLVED, that the phrase 'in good standing' be more accurately defined by the House of Delegates

THE SPEAKER Referred to Reference Committee on New Business A.

## 17 BROADCASTING

### Section 48

DR WIGHTMAN, of New York WHEREAS, the various Broadcasting Stations are being used by some drug and patent medicine manufacturers to exploit and make exaggerated and false claims for their products to the serious danger of public health, be it

RESOLVED, that the Medical Society of the State of New York go on record as favoring a Central National Clearing Bureau of the medical profession which shall act as a reference committee to confer and advise the Broadcasting Systems in accepting questionable material

THE SPEAKER Referred to Reference Committee on New Business B

## 18 ALCOHOL CONTROL

### Section 43

DR MACVAY, of Monroe WHEREAS, the Constitution of the Medical Society of the State of New York clearly sets forth the purpose of the Society, 'to secure the enforcement of just medical laws, to enlighten and direct public opinion in regard to the great problems of medicine'

WHEREAS, the Alcoholic Beverage Control Law, delegating to respective County Medical Societies the responsibility of nominations of local commissions, assigns to the Society an action that is not concerned with a great medical problem and is outside of the proper field of activity of the Society,

WHEREAS, with the probable repeal of the Eighteenth Amendment, the County Societies will have their duties extended in this field,

WHEREAS, the further discharge of such duties will tend to jeopardize the honorable professional standing which the Medical Society of the County of Monroe has sustained in its other activities, it is therefore

MOVED, that the Medical Society of the County of Monroe take a definite stand in regard to

its activities in this politico-social problem, it is further

MOVED, that this society go on record as being opposed to further functioning in this field of activity, and it is further

MOVED, that this action be transmitted to the Medical Society of the State of New York both by our delegates at the next annual meeting and in any other way that the Comitia Minora sees fit

THE SPEAKER Referred to Reference Committee on New Business C

## 19 POOLING RESOURCES OF PERSONS WITH LIMITED EARNING CAPACITY

### Section 52

DR. FERBER, of New York WHEREAS a Committee appointed by the House of Delegates of the State Medical Society of Michigan, in September, 1931, in its report rendered July, 1933, shows that 92 per cent of the people receive but 65 per cent of the total annual income of the population and

WHEREAS, this same Committee in a study of the living costs of this 92 per cent of the population, found that it ranged from \$42.00 below to \$443.00 above the family income, and

WHEREAS, this Committee also reports that whenever income was found in excess of living costs, it was also shown that medical care must compete with insurance, transportation, education and much urges that draw on the reserve that remains over the living expenses, and medical care is always the weakest, least considered competitor, and

WHEREAS, the statistics of the United Hospital Fund in New York show a constant and alarming increase in the attendance in the free dispensaries—the total number of individuals treated in the dispensaries in 1920 being 927,421 whereas in 1932 about 2,500,000 individuals were given free treatment by the doctors in the dispensaries with a total number of 7,623,765 treatments, and

WHEREAS, this alarming increase in the free treatments by physicians was constant and progressive even before and therefore not mainly caused by the depression, and

WHEREAS, this increasing burden of medical charity added to the constantly declining income of the doctor very seriously threatens his economic position, therefore, be it

RESOLVED, that a Committee be appointed by the properly constituted authority of our State Society for the purpose of devising some plan whereby people with limited earning capacity can pool their resources in order to have funds available to pay for their medical care this Committee is to report to the House of Delegates at the next Annual Meeting

THE SPEAKER Referred to Reference Committee on New Business B

## 20 SCHOOL VACATION

### Section 45

DR. BUCKMASTER of Chautauqua WHEREAS, the school year in the State does not end until the latter part of June allowing only July and August for vacation for the children, and

WHEREAS, the Chautauqua County Medical Society did go on record in favoring a shortening of the vacations throughout the school year, that school might be dismissed earlier in June, be it

RESOLVED, that the Medical Society of the State of New York recommend that the State Department of Education close the public schools of the State not later than the middle of June.

THE SPEAKER: Referred to Reference Committee on New Business C.

## 21. LABORATORIES OF CLINICAL PATHOLOGY Section 36

DR. BOETTIGER, of Queens: WHEREAS, in the conduct of Laboratories of Clinical Pathology, operated to assist the physicians in the diagnosis of disease, interpretation of findings is required, and

WHEREAS, such interpretation requires clinical knowledge and experience, therefore be it

RESOLVED, that the conduct of such laboratories is properly one of the specialties of the practice of medicine and that directors of such laboratories should be physicians licensed to practice medicine.

THE SPEAKER: Referred to Reference Committee on New Business A.

## 22. CONTRACT MEDICAL CARE Section 51

DR. BOETTIGER, of Queens: WHEREAS, the principles of professional conduct established by the Society are/or may be implicated and compromised in plans to provide cheap or "contract" medical care, therefore, be it

RESOLVED, that we reaffirm our position in these words:

It shall be considered unethical and unbecoming a gentleman and a physician to participate or engage in any plan, scheme or program, or institutional activity for the provisions of medical care through any agency which commercializes such care by solicitation in the form of printed, written, or spoken advertisement distributed or displayed to or through lay or nonmedical channels.

And further, the self-appraisal by laudatory claims of unusual or superior character or facility of service, or the setting up by an institution or plan of a schedule of "cut-rate" fees for medical or surgical care, shall be considered to be the acts of each individual employed or engaged therein, and for which conduct he shall be held accountable to and subject to discipline by the County Medical Society.

THE SPEAKER: Referred to Reference Committee on New Business B.

THE SPEAKER: Dr. Farmer will now present a supplementary report of the Committee on Public Health and Medical Education.

## 22 A. SUPPLEMENTARY REPORT Section 39-65

### COMMITTEE ON PUBLIC HEALTH AND MEDICAL EDUCATION

Subsequent to the submission of the regular report of this Committee several important matters have come to its attention which have required its consideration. At a recent meeting of the Committee it was decided that a supplementary report, covering these subjects, should be submitted.

#### *Diphtheria Immunization*

The State Department of Health is carrying on at the present time a campaign for immunization of children against diphtheria. The various agencies which operated in the five-year

campaign some years ago are participating in this campaign. This campaign was started because outbreaks of diphtheria were more prevalent in the State in 1933 than in 1932. The increase, while not alarming, did seem to justify some action that would prevent a corresponding increase in 1934. Your Committee on Public Health and Medical Education has sent a letter to the Secretaries and the Chairmen of the Public Health Committees of all county medical societies informing them of the purposes and plan of this campaign. Each county society has been asked to bring this matter to the attention of the physicians in their society and to develop a program which will include a definite plan providing for this work to be done as much as possible by the individual physician and also cooperation with the State Department of Health whereby children in all families will be immunized. Your Committee believes that it is essential that all children should be immunized against diphtheria. However, it calls attention to the fact that in accomplishing such results the province of the official department of health should be the advertising of the necessity of such immunization while the actual work of immunization should be the province of the physician. Such a policy requires the county medical society to effect a proper organization for that purpose.

#### *Standing Orders for Public Health Nurses*

Your Committee has received from the Division of Public Health Nursing of the State Department of Health a list of suggestive standing orders for public health nurses. These orders cover the usual daily routine work of the nurse, first-aid work, and temporary use before the nurse has contacted the attending physician. A subcommittee which has been appointed to study these suggestions has not had sufficient time to make its report. If after doing so it is deemed necessary and proper these suggestions will be sent to the various county medical societies for their approval.

#### *Nursing Education in New York State with Suggested Remedial Measures*

The attention of your Committee has been very recently called to certain suggested remedial measures dealing with nursing education which have been proposed by the State Department of Education. Your Committee believes that these suggested measures are important enough to be studied by this Society and recommends that the House of Delegates authorize the Committee on Public Health and Medical Education to make such a study and report its findings as early as possible to the Council or its Executive Committee.

#### *Control of Syphilis*

Two members of the Committee, Dr. Kosmak and the Chairman, were recently asked to take part in a conference dealing with the subject entitled, "What are the Most Important Measures in the Community Program for the Prevention of Syphilis and How Can They Promptly Be Put into Effect?" This conference was arranged by the Committee on Tuberculosis and Public Health of the State Charities Aid Association. Although the subject of the conference referred to a Community Program, nevertheless, the discussions included to a large degree the treatment of syphilis and indicated the tendency in certain groups for this treatment to be carried on only



by specialists or that complete responsibility for treatment be given to the government. While it was agreed beforehand that the conference should adopt no definite conclusions, nevertheless, there was considerable expression of opinion disagreeing with these two above mentioned contentions. The members of your Committee contended that diagnosis and treatment of syphilis was a medical problem, belonged in the hands of the physician, and that the medical profession was carrying on the adequate educational work to provide proper treatment. Your Committee believes that this should be brought to your attention in order to inform you of these tendencies and also of the necessity of continual graduate education in the treatment of syphilis. This conference also considered the advisability of requiring a blood test for syphilis in all pregnant women the same as prophylactic measures are required for the prevention of ophthalmia neonatorum. One health official questioned the legality of such requirement. The members of your Committee felt there was a growing tendency on the part of physicians to have blood tests on such cases and that continued improvement would be better accomplished through education rather than regulation.

#### County Maternal Welfare Commissions

In its regular report the Committee has recommended the organization in each county medical society of a maternal welfare commission. At its last meeting Dr Arthur W Bingham who organized the first commission in the Essex County Medical Society of New Jersey, addressed the Committee describing the work in the State of New Jersey and what had been accomplished. Your Committee is more convinced than ever that while such commissions should be established and organized by members of county medical societies, they should request and welcome the cooperation of all other organizations organized for this purpose. Dr Bingham's report shows that this cooperation has been obtained in New Jersey but that the direction of the work has been definitely under the control of the Commission of the County Medical Society.

#### General Comment

The matters contained within the regular as well as this supplementary report of this Committee demonstrate the vital need of wide awake efficient public health committees in each county medical society. The President of each county society should see that such committees are immediately appointed and their names reported to your State Committee. The Presidents of the District Branches might be charged with the responsibility of seeing that this is done in each District. With the proper organization of such committees your State Committee can make considerable progress in dealing with the various subjects of the report during the coming year.

THE SPEAKER This supplementary report will be referred with the original report to the Reference Committee on Public Health and Education.

#### 23 UNETHICAL MEDICAL ADVERTISING OVER THE AIR

##### Section 49

DR. SAYL, of New York. WHEREAS, it has become increasingly apparent to members of the Society that advertising over the air has become increasingly more unethical, and

WHEREAS, the County Medical Societies in the metropolitan district have through their various committees, succeeded in obtaining only a moderate degree of cooperation with the radio broadcasting stations with a view of causing a cessation of unethical medical advertising over the air, and

WHEREAS, the broadcasting stations are calling upon organized medicine for support in the arrangement of sustaining programs, and

WHEREAS, organized medicine and members of the medical profession have cooperated with the broadcasting stations to provide informative medical programs of interest to the public and in the interest of the public health over the air, and

WHEREAS the American Medical Association has made arrangements with national broadcasting organizations to provide such sustaining programs for them from the headquarters of the American Medical Association in Chicago, therefore, be it

RESOLVED that the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association bring to the attention of the House at the impending session in Cleveland the fact that organized medicine and the medical profession are dissatisfied with the quality of commercial programs advertising various proprietary and household remedies, and believe that these programs are of such a nature as to be inimical to the welfare of the people and detrimental to the interests of the medical profession, therefore, be it further

RESOLVED, that our delegates call upon the American Medical Association to take such steps as they may deem advisable and necessary to cause an improvement in radio broadcasting and a cessation of unethical practice as above outlined, over the air.

THE SPEAKER Referred to Reference Committee on New Business B

#### 24 NURSE ANESTHETIST

##### Section 40

DR. WELKER, of New York. WHEREAS, the House of Delegates of the Medical Society of the State of New York at its last session in New York City, in April 1933, passed a resolution as to the nurse anesthetist, which resolution was referred to the properly constituted authorities of the Medical Society of the State of New York, for further action, therefore, be it

RESOLVED, that the delegates of the Medical Society of the State of New York to the American Medical Association be instructed to present a similar resolution to the House of Delegates of the American Medical Association at the impending session in Cleveland, Ohio.

THE SPEAKER Referred to Reference Committee on New Business C

#### 25 DUES REDUCED FOR YOUNG PRACTITIONERS

##### Section 35

DR. KOSMAK, of New York. WHEREAS it would be in the interest of organized medicine and of the County Medical Societies to include within its membership as large a percentage of ethical practitioners of medicine as possible and

WHEREAS, the Membership Committee of the Medical Society of the County of New York is of the opinion that specific inducements should be made in the way of lightening the financial

burden of membership for medical men who are in practice less than five years and are unable to meet the full financial requirements of membership, and

WHEREAS, there is a large group of young practitioners who are eager to join the ranks of organized medicine by joining the County Medical Societies, therefore be it

RESOLVED, that the House of Delegates go on record as favoring a 50 per cent reduction in the State assessment for medical practitioners less than five years in practice, and be it further

RESOLVED, that the properly constituted authorities of the Medical Society of the State of New York take steps to initiate such changes in the Constitution and By-laws as to enable the State Society and the County Societies to accept membership on this basis.

THE SPEAKER: Referred to Reference Committee on New Business A.

## 26. SUPPLEMENTARY REPORT OF COMMITTEE ON LEGISLATION

### Section 59

DR. ARANOW. Presented the following supplementary report:

The legislative season for 1934 finally closed on Saturday, April 28th at 2:30 A. M. Your committee never had so much legislation to concern itself with, and it is pleased to report that no inimical or undesirable legislation was passed by both Houses except the fifth osteopathy bill which, after having been defeated in the Assembly, was reconsidered and passed. Later it was passed by the Senate toward the close of one of its prolonged night sessions. At 2:00 A. M. it was voted upon after a display of much political and sentimental influence in its favor. We filed with the Governor arguments against his signing the bill and invited the County Societies to do likewise.

Permit me here to again call attention to the one great defect in our organization, the apparent lack of interest on the part of the individual physician. I have definite information that hundreds of osteopathic sympathizers have written to the legislators and the Governor while the response from the medical profession has been practically limited to the officers of the County Society.

Gentlemen of the House of Delegates, we, the members of the Medical Profession, have the greatest potential power of any group in the state, and yet because of lack of organization we allow groups to develop sufficient political influence to pass legislation inimical to the interest of the public in the medical profession.

Our hospital lien bill, which would accord the privilege of filing a lien not only to the hospitals but to the physicians and nurses, passed the Senate with no difficulty but was defeated in committee on the Assembly side because of a technicality.

The hospital dispensary and nurse anesthetist bills could not be moved from their respective committees. The chairmen of the committees and introducers of the bills claimed there was too much opposition to the bills to have them advanced. Three antivivisection, two antivaccination and two 2-per cent sales tax bills were defeated in committee. No chiropractic bill was introduced.

Several amendments to the Workmen's Compensation Law, particularly one to provide for the creation of treatment clinics throughout the State, with which we were not in sympathy, were defeated. The bill that was drafted on the report of the Governor's Special Committee on Workmen's Compensation, was discussed at a hearing before the Senate Committee on Labor and Industry and afterward amended in a way to make it very unacceptable to us. Therefore, we opposed its advancement in the amended form, with the result that it was killed in committee.

A bill aiming to put all clinical and pathological laboratories under the control of licensed physicians was introduced, but opposition to it was so powerful that it could not be advanced, in spite of the fact that an attempt was made to amend it successfully.

At a conference of the committee held subsequent to the adjournment of the Legislature for the purpose of reviewing the work of the session, it was decided that during the interim before the next Legislature convenes, new drafts of the hospital lien and clinical laboratory bills should be made in accordance with criticism and suggestions offered by the legislators. It was further agreed that special efforts must be made to arouse interest in the nurse anesthetist and hospital dispensary bills if they are to be more favorably considered by the Legislature.

Finally, let me again urge the medical profession, through the House of Delegates, to initiate the organization of lay groups throughout the State to protect the public against vicious medical legislation detrimental to the health and welfare of the people of the State of New York. The medical profession has carried this burden alone altogether too long.

THE SPEAKER: Referred to the Reference Committee on Report of the Committee on Legislation.

## 27. SOCIALIZATION OF MEDICINE

### Section 44

DR. FRUCHT, of Kings: WHEREAS, in the report of our President of the State Society, there is immediate danger for the socialization of medicine by lay bodies, and

WHEREAS, in the *Journal of American Medical Association* an editorial on May 12th, states that there is a trend toward a change in the present form of medical practice, and

WHEREAS, a large group of physicians in New York City have already formulated a plan, be it

RESOLVED, that the Committee on Economics investigate the plans proposed and report at the next session of the House of Delegates.

THE SPEAKER: Referred to Reference Committee on New Business C.

## 28. PUTNAM COUNTY MEDICAL SOCIETY

### Section 32

THE SPEAKER: This, gentlemen, is a petition for the formation of a Putnam County Medical Society.

"We, the undersigned physicians, members of the Dutchess-Putnam County Medical Society and residents of Putnam County, do hereby petition the House of Delegates of the Medical Society of the State of New York for permission

to form our own separate organization, to be known as the Putnam County Medical Society:

*E. Roberts Richu, Brewster*  
*George H. Stacey, Lake Mahopac*  
*Alexander Vanderburgh, Brewster*  
*Robert S. Clazer, Brewster*  
*Frank C. Genovese, Patterson*  
*Ralph M. Hall, Cold Spring*  
*W. J. Cowan, Cold Spring*  
*Corryell Clark, Cold Spring*  
*Francis J. McKean, Carmel*  
*John T. Jenkins, Lake Mahopac*

We, the undersigned physicians practicing in Putnam County, do hereby petition the House of Delegates of the Medical Society of the State of New York for permission to organize a Putnam County Medical Society

*Garrett W. Pink, Carmel*  
*William P. Kelly, Carmel*  
*W. P. Locke, Cold Spring*

THE SPEAKER Referred to Reference Committee on New Business C

## 29 SUPPLEMENTARY REPORT, COMMITTEE ON ECONOMICS Section 71

DR. GOODRICH, of Kings Since the report of the Committee on Economics was written and handed to the printer, the chairman of the Economics Committee at the expenditure of a large amount of time and skill and general ability, has had made for the information of the House of Delegates a large chart which shows all of the paragraphs in the various laws of the State of New York which have to do with the care of the indigent. It shows how these are related, how they conflict, how they are sometimes inconsistent and in some ways how they need codification.

This is the first large step the preparation of these paragraphs and bringing them together, the first step in the work that is mentioned in the report of the Committee on Economics, which shows that we are endeavoring to cooperate with all of the State departments in investigating the laws concerning the care of the indigent and in assisting and cooperation in their codification.

THE SPEAKER Referred to Reference Committee on Report of Committee on Economics

## 30 RACIAL DISCRIMINATION

### Section 70

DR. LEITNER, of Rockland WHEREAS civilized peoples have never discriminated against anyone who contributes to medical science or against one who is qualified to engage in the healing of the sick because of his race, or religious belief, or economic views,

WHEREAS, under the Nazi regime, by governmental decrees and otherwise persons engaged in research or the practice of medicine have been either barred or expelled from their laboratories and clinics without justice or reason, other than that they differed in racial origin or religion from that of their colleagues, and

WHEREAS, our brother physicians are not permitted to participate in the health insurance service and are permitted to consult only with physicians designated by the German Government, and expelled from medical societies and clubs in spite of their previous noteworthy contribution to science and medicine and

WHEREAS, such discrimination tends to hamper

the efforts of the profession in its chosen task of combating disease and alleviating suffering, and

WHEREAS, German medicine, previous to the past year, has made outstanding contributions in the field of human progress,

WHEREAS, the measures instituted by the present Nazi government are doing incalculable harm to the progress of medicine throughout the world, therefore, be it

RESOLVED, that the Medical Society of the State of New York record its abhorrence and voice its resentment against such practices as being unfair inhuman, and inimical to progress of medicine generally and a violation of those humane ideals which are amongst the cherished traditions of the medical profession and be it further

RESOLVED, that the Delegates of this House to the American Medical Association be instructed to register the protest of this body

THE SPEAKER This resolution will be referred to the Reference Committee on New Business A

THE SPEAKER There being no further resolutions, I declare a recess while the Reference Committees organize The House will reconvene at 2 30 P M

## AFTERNOON SESSION, 2 30 P M

The meeting was called to order by the Speaker at 2 30 P M

## 31 WOMEN'S AUXILIARY

DR. FLAHERTY Mr Speaker, last year at the meeting of the House of Delegates, a motion was passed that we were in favor of establishing a women's auxiliary of the Medical Society of the State of New York We have with us today the wife of Dr. Robert Tomlinson, Mrs. Tomlinson, of Wilmington Delaware, who came up here purposely to tell us of the ideas and purposes of the Women's auxiliary

THE SPEAKER Mrs. Tomlinson has the floor  
MRS. TOMLINSON I will take office in Cleveland as the next president of the Women's Auxiliary to the American Medical Association

The membership of the auxiliary is confined to the immediate women members of physicians' families and is largely composed of the wives of physicians

It is organized in thirty eight or thirty nine states and the District of Columbia in this country and elsewhere and has some fourteen thousand members

In beginning any auxiliary that is formed, it must have an advisory council, usually of three to five members of the State Medical Society, because there is no work which an auxiliary may undertake which has not been approved by this advisory committee

We believe that we can be useful and I believe in most Medical Societies that the auxiliaries have proven useful

We meet with other physicians' wives, we can talk about affairs that are of interest to the public, we can keep our ears to the ground While we may not tell anything about treating the sick—that is not our province—we can try and put hygeia in the schools, we can meet with the Parent-Teachers Associations and we can help sometimes with legislation if you ask us to do it We cannot do it otherwise We can talk

preventive medicine which covers such a large field now. We can make reports on public health to women's organizations.

If in the State of New York you want an auxiliary, the first thing is to have your council of the men whom your president will appoint. If, after they are appointed, they wish us to do it, we will be more than glad to communicate with the presidents of your various county medical societies, asking them to appoint one woman to organize that county, or perhaps to call a group of the women together to organize it.

If you wish it, we would be glad to help with that organization, to speak to your wives of the use that we believe that they—organized—can be to you.

### 32. PUTNAM COUNTY MEDICAL SOCIETY

#### Section 28

THE SPEAKER: Is there any reference committee ready to report?

DR. PODVIN, of Bronx: Reference Committee on New Business A. Relative to the petition for the formation of a Putnam County Society, it is the opinion of the Committee that this petition should be referred back to the Dutchess-Putnam Society for a conference between them.

The result of this conference to be reported to the House of Delegates for final action.

I move its adoption.

Motion seconded and carried.

### 33. MEMBER IN GOOD STANDING

#### Section 16

In reference to the Resolution presented by Dr. Joachim, requesting the definition of the phrase "good standing," your Committee recommends the adoption of this Resolution with a change, whereby the matter is referred to the Council.

The Resolution reads, as follows:

WHEREAS, the definition of "member in good standing" is surrounded by some doubt insofar as it applies to the benefits derived by membership in the Society in the group liability insurance, therefore, be it

RESOLVED, that the phrase "in good standing" be referred to the Council of this Society for the purpose of securing a ruling that will accurately define this phrase; or if necessary the proposal of amendments to the by-laws for this purpose.

I move its adoption.

Motion seconded and carried.

### 34. LOCATIONS FOR DOCTORS BEGINNING PRACTICE

#### Section 12

Your Reference Committee approves of the subject matter in the resolution submitted by Bronx County in regard to assisting doctors in the matter of selecting places to begin practice but believes that the necessary information can better be secured by the Executive Officer than by any Special Committee and therefore presents the following amended resolution:

WHEREAS, the Officers of County Societies are often called upon to assist doctors in the matter of selecting a place to begin practice, or those desiring to make a change in their present location, and

WHEREAS, it is impossible for the County Societies to furnish such information to their members, be it

RESOLVED, that we recommend to the properly constituted authorities that the Executive Officer be directed to secure and keep available information for this purpose.

I move its adoption.

Motion seconded.

DR. BEDELL: May I ask a question? Why should it be the Executive Officer instead of our secretarial officer?

DR. PODVIN: We felt that the Executive Officer was more in touch with conditions throughout the state. He goes around more and would be in a better position to get this information together.

Motion carried.

### 35. DUES REDUCED FOR YOUNG PRACTITIONERS

#### Section 25

DR. PODVIN, of Bronx: In reference to the resolution in regard to reduced membership fees for young practitioners, your committee approves of this resolution with a slight change of wording to clarify the meaning.

The resolution now reads as follows:

WHEREAS, it would be in the interest of organized medicine and of the County Medical Societies to include within its membership as large a percentage of ethical practitioners of medicine as possible, and

WHEREAS, the Membership Committee of the Medical Society of the County of New York is of the opinion that specific inducements should be made in the way of lightening the financial burden of membership for medical men who are in practice less than five years and are unable to meet the full financial requirements of membership, and

WHEREAS, there is a large group of young practitioners who are eager to join the ranks of organized medicine by joining the County Medical Societies, therefore, be it

RESOLVED, that the House of Delegates go on record as favoring a fifty per cent reduction in the State assessment for physicians for the first five years after graduation from Medical College, and be it further

RESOLVED, that the properly constituted authorities of the Medical Society of the State of New York take steps to initiate such changes in the constitution and by-laws as to enable the State Society and the County Societies to accept membership on this basis.

I move its adoption.

Seconded.

THE SECRETARY: I don't see just what we are going to do about legal defense in malpractice cases if we reduce the dues for anybody here.

DR. KOSMAK, of New York: I fully realize the condition which has been presented by Dr. Dougherty. It might be practical to add as an amendment to this resolution that malpractice defense should not be included for these men who pay reduced fees.

The primary object, gentlemen, in proposing this was to get as many of the younger men interested in the organized medical profession as possible, and I think that if you hold out some such inducement as this you will get in a great many men who would otherwise remain outside the ranks.

I think it is a matter that should be very carefully considered by this House of Delegates.

I don't believe that the men who have recently

graduated will be interested in the question of malpractice insurance.

Therefore I think we should hold out this inducement possibly with the amendment that malpractice defense be excluded.

THE SPEAKER: Will you present an amendment, Dr. Kosinak?

DR. KOSINAK: I would like to present that in the form of an amendment:

RESOLVED, that the malpractice defense clause be not included in this class of membership.

DR. SCHIFF, of Clinton: It would seem to me unnecessary to propose such an amendment. In a group of practitioners under five years, owing to the number of cases that such practitioners will have, the liability of malpractice must of necessity be considerably smaller and it would seem to me that that proportion of dues would carry its own share of defense.

Personally I believe that this type of inducement to get men interested in organized medicine early in their medical careers is worth while.

DR. GROAT, of Onondaga: I move an amendment that that part of the resolution which refers to the elimination of defense against malpractice be stricken out.

Motion seconded.

THE SPEAKER: Are you ready for a vote on the last amendment: "Resolved, that the malpractice defense clause be not included for this class of membership, namely those who only pay fifty per cent to the state assessment, who are five years out of medical college." That is the amendment made by Dr. Groat, that that be deleted and have no part in the proposal as it will come before you if you vote on this amendment.

A vote was thereupon taken.

THE SPEAKER: The chair is in doubt. Those in favor kindly rise.

The amendment is carried.

THE SPEAKER: Now we have to vote on the proposition as amended. The resolution reads: "That the House of Delegates go on record as favoring a fifty per cent reduction in the state assessment for physicians for the first five years after graduation from medical college, and be it further

RESOLVED, that the properly constituted authorities of the Medical Society of the State of New York take steps to initiate such changes in the Constitution and By-laws as to enable the State Society and the County Societies to accept membership on this basis.

THE SECRETARY: On a point of order. My point of order is that that resolution is absolutely wrong in its wording because we have no such clause in the By-laws or Constitution.

We must remember that there are any number of activities of this Society that are not in the Constitution or By-laws. Our society is run by resolution more than by Constitution or By-laws. The resolutions of the House hold until the meeting of the next House. Anything you put in your By-laws has to lie over for a year for action by the House of Delegates.

If you look at your By-laws you won't find anything that says you shall have a Counsel; it does not say anything about the fact that you must have a JOURNAL; it does not say anything about dues; there are any number of things of that kind, and I noticed some of the resolutions this morning that were a little contradictory.

THE SPEAKER: The point of order is well taken. The last paragraph of the resolution is

not necessary because it conflicts with nothing. Those in favor of the resolution: "That the House of Delegates go on record as favoring a fifty per cent reduction in the state assessment for physicians for the first five years after graduation from medical college."

A vote was taken.

THE SPEAKER: The chair is in doubt. Those in favor kindly rise. \* \* \* Those against kindly rise. \* \* \* The motion is lost.

### 36. LABORATORIES OF CLINICAL PATHOLOGY

#### Section 21

DR. POUVIN, of Bronx: Reference Committee on New Business A. With reference to the resolution:

"WHEREAS, in the conduct of laboratories of clinical pathology operated to assist the physicians in the diagnosis of disease, interpretation of findings is required, and

"WHEREAS, such interpretation requires clinical knowledge and experience, therefore, be it

"RESOLVED, that the conduct of such laboratories is properly one of the specialties of the practice of medicine and that directors of such laboratories should be physicians licensed to practice medicine."

Your Reference Committee approves this resolution and moves its adoption.

Motion seconded.

DR. KNICKERBOCKER, of Ontario: There are established throughout the state numerous laboratories, some of which are under the charge of men who are not M.D's. They are competent and capable men, approved by the State Society. Does this resolution affect them?

DR. POUVIN: I should say under this resolution it does. The wording of it is "that the conduct of such laboratories is properly one of the specialties of the practice of medicine and that directors of such laboratories should be physicians licensed to practice medicine." I don't think it could be made any clearer. Perhaps Dr. Boettiger, who introduced the resolution may wish to say a word.

DR. BOETTIGER, of Queens: The purpose of the resolution is to establish a principle. It has no reference to any law of any kind.

A vote was taken and the motion carried.

### 37. MALPRACTICE DEFENSE AND GROUP INSURANCE

#### Section 7

DR. POUVIN, of Bronx: Reference Committee on New Business A. Your Committee, after discussing the resolution submitted by Dr. Heyd finds that it would be unwise to accept Section 1, and that Sections 5 and 6 can accomplish no practicable result. We also find it advisable to clarify the preamble by inserting an additional paragraph and modifying the wording of one paragraph.

The Resolution, as amended, reads as follows: WHEREAS, it is apparent that the incidence of malpractice is constantly rising for the members of the Medical Society of the State of New York, and

WHEREAS, the cost of malpractice actions must be met by the premiums and membership dues paid by the members, and

WHEREAS, the present trend of malpractice actions render it highly probable that the basic rate for malpractice insurance shall have to be increased, and

WHEREAS, malpractice cases are often the result of critical and careless remarks by physicians to patients, and

WHEREAS, the practice of rendering expert testimony upon a contingent fee basis is in violation of Section 28 of the Principles of Professional Conduct, be it

RESOLVED, that it shall be the policy of the Medical Society of the State of New York:

(1) That all members shall, whenever possible, use their best influence to discourage or prevent suits or claims against members, except where in their best judgment such suits or claims are founded in fact upon injury to patients caused by clear negligence.

(2) That members shall be ready at all times to render every proper assistance in the defense of suits and claims against other members.

(3) That no member of this Society shall make a charge or receive any compensation for his services based upon the outcome of any malpractice suit or claim in which he shall appear as witness.

I move its adoption.

THE SPEAKER: The amended resolution of the Reference Committee is before you. Is there any discussion?

DR. LEBER, of New York: May I ask if there is any method by which this resolution will come to the attention of the rank and file of members of the State Medical Association?

THE SPEAKER: The transactions of the House of Delegates are published in the JOURNAL.

DR. LEBER, of New York: I repeat my question. I think this is one of the most important resolutions you have before you. I have thought for years that the members of the Society have been very negligent, or rather, their counsel, in not giving them the opportunity to know how to avoid malpractice suits and I think that just passing a very important resolution such as this today in the hope that some member may read it, I think, is perhaps losing the best part of the meat of that resolution.

DR. BOETTIGER, of Queens: As a member of the Reference Committee, I wish to emphasize the statement just made. We would like in some way to have this important fact very strongly brought to members of the profession.

DR. ARANOW, of Bronx: Referring to the preamble to the resolution, it seems to me an unwise thing to go down on record that we are opposed to any doctor criticising another doctor. We are opposed to criticising him unjustly, but we don't want to go on record as an organized group.

THE SPEAKER: I think a re-reading of the preamble will clear the atmosphere.

DR. PODVIN, of Bronx: The part Dr. Aranow refers to was in the preamble of the original resolution as presented by Dr. Heyd, but the resolution as amended by the committee does not contain that. It says: "Your Committee, after discussing the resolution submitted by Dr. Heyd, finds that it would be unwise to accept Section 1."

That is the section which contains that part. Then it goes on about the incidence of malpractice, which it is unnecessary for me to read again. There is no reference to expression of opinion.

DR. GOODRICH: I move you, that this motion be amended by adding these words: "And that the House of Delegates direct the Executive

Committee to make this resolution the subject of editorial comment."

THE SPEAKER: The resolution as amended is before the house.

A vote was taken and the motion carried.

### 38. REPORT OF THE REFERENCE COMMITTEE ON THE REPORT OF THE TREASURER AND THE BOARD OF TRUSTEES

DR. DANNREUTHER, of New York: Your Reference Committee on the Report of the Treasurer and the Board of Trustees commends all of those responsible for the financial condition of the Society, the conservation of its resources, and the stability of its investments. Your Committee endorses the Treasurer's policy of having available sufficient funds to be utilized for serious emergencies that may arise from time to time. Your Committee also approves of the yearly addition of reasonable amounts to the reserve funds of the Society. Your Treasurer submitted detailed supplementary reports of all expenditures and your Committee examined particularly the items included in the expenses of the Committee and general salaries. Your Committee is convinced that all of these expenses were necessary and justifiable. The net cost of the Directory has been reduced to a minimum. While the cost of the JOURNAL amounted to a little more than \$6,000 for the current year, the complete change in its format and editorial expenses, initiated January 1, 1934, will undoubtedly eventuate in its future conversion into a financial asset to the Society. Your Reference Committee agrees with the Board of Trustees that all expenditures should be carefully scrutinized and restricted to essentials, and that strong reserves are necessary to equip organized medicine for a possible conflict with the proponents of socialized medicine.

I move its adoption.

Motion seconded and carried.

### 39. REPORT OF REFERENCE COMMITTEE ON REPORT OF COMMITTEE ON PUBLIC HEALTH AND MEDICAL EDUCATION

#### Section 22A-65

DR. CRITCHLOW, of Erie: This Reference Committee has individually and collectively made a careful study of the report of the Committee on Public Health and Medical Education. We desire to congratulate the Society on having a committee which gives evidence in its annual report of having devoted so much time and thoughtful attention to the various problems confronting them in their particular field.

We approve of the report in its entirety, but wish to stress a few of the special topics therein discussed.

#### GRADUATE EDUCATION

We believe the report rightly gives first place to the subject of Graduate Education. The plan now being pursued by the committee, of sponsoring graduate courses through the County Societies, would seem to be the most practical and best calculated to accomplish the desired result, namely, arousing the interest of physicians generally in the idea of continuation studies in live medical subjects. The increasing number of counties availing themselves of this opportunity speaks for the soundness of the plan now in action. We believe the committee's idea is sound in concentrating the topics of any course on a more or less definite subject. We recommend a continuation and further development of

the committee's general plan of Graduate Education

I so move

Motion seconded and carried

#### GENERAL PUBLIC HEALTH ACTIVITIES

This section of the report is brief, merely mentioning tuberculosis, cancer, examination of school children by private physician. We note that a special subcommittee will report to the House of Delegates on a study of the deaf and hard-of-hearing children in the State. We await with interest the more definite report promised on the subject of arthritis as a public health question.

"The individual physician and preventive medicine," is a topic which occupies one half of the space devoted to the report under review. The importance of the subject as bearing on the economic future of the general practitioner fully justifies the prominence accorded to the question.

In these days, when the fear of 'State Medicine' is ever present in the minds of physicians, any discussion is pertinent and timely, which considers possibilities for enlarging the field of the practitioner's activities. That the work of Health Departments is seriously encroaching on the territory of the private physician few will deny. Can this expansion of departmental activities be checked by allocating to the practitioner some of the duties now assumed by the state? This, in brief, is the question propounded in the report under review. The committee states its belief 'that this society can introduce a plan whereby the physician will participate more directly in the field of preventive medicine and briefly outlines the essential features that should be embraced in such a plan.

We heartily endorse the recommendation of the Committee that the House of Delegates take some action. We are of the opinion, however, if such action goes only so far as to urge County Medical Societies to consider a plan that valuable time would be lost. We believe more direct action is better, we therefore, recommend that the Committee on Public Health and Medical Education be instructed to formulate such a plan, for submission to the County Societies for action.

I so move

DR. CONWAY, of Albany. Do you appreciate what that means? That a Committee of this House is to present a plan to the County Societies for action? Have you gone over the history of these other state societies that have gone through this same thing?

THE SECRETARY. This is absolutely wrong. No committee ought to be allowed power of this kind. The committee should, after formulating the plan, make their report according to law, to the Executive Committee.

DR. FARMER, of Onondaga. As chairman of the committee, I want to make it plain that we would submit such a plan to the Executive Committee first. I am sure the Reference Committee will make it plain that they would want that done.

DR. KAUFMAN, of New York. I move that the resolution be referred back to the committee for correction.

Motion seconded and carried.

DR. CRITCHLOW, of Erie. Maternal Mortality.

We would emphasize that section of the report dealing with maternal mortality. We approve the recommendation of the committee that the House of Delegates authorize the Committee on Public

Health and Medical Education to organize Maternal Welfare Commission in each County Society and to advise in regard to their specific duties. We so recommend.

THE SPEAKER. You have heard the recommendation.

THE SECRETARY. I hope Mr. Speaker, that this will be changed. I think Dr. Farmer really means that it should come from the Committee to the Executive Committee. No standing committee has a right to do anything else on its own initiative. They must report to the Executive Committee.

DR. KAUFMAN, of New York. I move that it be referred back to the committee.

Motion seconded and carried.

DR. CRITCHLOW, of Erie. At the same time we believe the Committee on Public Health and Medical Education should prepare to correlate the findings of various medical organizations that have already made or in the future may make, surveys of the maternal mortality problem. We so recommend.

We approve the recommendation of the Committee on Public Health and Medical Education in their supplementary report that the said Committee be instructed to study the suggested remedial measures on nursing education in New York State and report to the Council without delay.

Finally, we wish to express our appreciation of the services of Dr. Farmer, and his committee, in bringing briefly but forcibly to our attention the subjects treated in the report under review.

I move its adoption.

Motion seconded and carried.

#### 40 NURSE ANESTHETIST

##### Section 24

DR. HAMILTON, of New York. WHEREAS the House of Delegates of the Medical Society of the State of New York at its last session in New York City in April 1933, passed a resolution as to the nurse anesthetist, which resolution was referred to the properly constituted authorities of the Medical Society of the State of New York for further action, therefore, be it

RESOLVED, that the Delegates of the Medical Society of the State of New York to the American Medical Association be instructed to present a similar resolution to the House of Delegates of the American Medical Association at the impending session in Cleveland, Ohio.

The Committee on New Business C recommends the approval of the resolution introduced by the Medical Society of the County of New York in reference to the Nurse Anesthetist as to the instruction of the delegates to the meeting of the American Medical Association, in Cleveland, Ohio.

I move its adoption. Motion seconded.

DR. ROONEY, of Albany. May we have the original resolution read?

The Assistant Secretary read the following which was approved by the House of Delegates at the 1933 Meeting.

WHEREAS, at the time of the passage of the Medical Practice Act, and for many years thereafter, it was the accepted interpretation that the administering of an anesthetic by any one except a licensed physician or dentist was illegal, and this also was evidenced by the ban on the administering of anesthetics by duly licensed osteopaths, and

WHEREAS, during the past ten years or so there has been an insidious usurping of the duties and rights of duly licensed physicians by lay technicians and nurses who administer anesthesia despite the fact that there has been no change in the Medical Practice Act; and

WHEREAS, during this same period there have been marked advances in the physiological, chemical, mechanical, and therapeutic problems involved in anesthesia to none of which non-medical technicians have made any contribution; and

WHEREAS, these advances have reached a stage where they require a medical education for their proper interpretation and safe utilization; and

WHEREAS, the present custom in many hospitals of having nonmedical technicians administer anesthetics deprives the residents or internes of opportunities for instruction in this important branch of medicine, yet these same doctors, untrained in anesthesia, will subsequently be the ones the law assumes to be qualified to give, supervise, and to accept full responsibility for the administration of the anesthesia; and

WHEREAS, the inroads of these technicians have tended to discourage medical graduates from entering this field of medicine, and have decreased the likelihood of qualified medical successors to those who have been so instrumental in advancing the art and science of anesthesia; and

WHEREAS, the giving of an anesthetic involves on the part of the operator the exercise of judgment, discretion and skill, and is not merely a mechanical performance which can be routinely performed by any untrained individual without jeopardy to the patient; and

WHEREAS, the successful administration of anesthesia requires the exercise of proper medical care during the procedure, involves an examination of a patient to determine his physical ability to undergo the process and a careful watching of the patient during the administration of the anesthesia to determine its effects and the quantity administered; and

WHEREAS, the prevalent custom of evasion of the spirit of the law by the technical assumption of responsibility by the operating surgeon is a mere subterfuge, as the surgeon in most hospitals rarely selects or inquires into the technician's qualifications, does not usually supervise the administration of the anesthetic at its most critical period, namely the induction, and even though present during its maintenance the surgeon, because of his interest in the operative procedure, cannot always promptly detect the necessity for therapeutic intervention, which determination must be left to the judgment of the anesthetist; and

WHEREAS, many hospitals and private sanatoria advertise to the public and the profession that an anesthetist will be available; this being a misrepresentation when such anesthetist is only a technician, while the general assumption is that the term anesthetist implies a physician; and

WHEREAS, since the surgeon is by law responsible for the act of an agent, if in fact the lay anesthetist is the doctor's agent when administering an anesthetic, the surgeon assumes a responsibility and liability which under certain circumstances may nullify the effect of his malpractice coverage if it can be proved that such lay anesthetist is performing an unlawful or illegal act; and

WHEREAS, our acquiescence to the encroachment by nonmedical technicians in the field of anesthesia, on the prerogatives of the physician, will make it increasingly difficult to exclude the osteopaths and others from these same privileges, for if any division of medicine desires to nullify any section of the Medical Practice Act it can do so by the subterfuge of assuming the responsibility, then other divisions of medicine must, in justice, be accorded the same privilege and the whole Act be thus weakened. Therefore be it

RESOLVED, that the Medical Society of the State of New York affirm that the giving of an anesthetic constitutes the practice of medicine and insists on the strict observance of the provisions of the Medical Practice Act, without subterfuge or evasion; and be it further

RESOLVED, that if it is the opinion of the Attorney-General that nonmedical technicians practicing anesthesia are not violating the law under present conditions, that the proper procedure be instituted to obtain legislation which will include anesthesia in the practice of medicine or limit the administration of anesthesia to duly licensed dentists or physicians.

DR. GOODRICH, of Kings: One of the tasks of the Committee on Economics in the past year has been to consider encroachments on the practice of medicine made by hospital organizations. A subcommittee from members of the State Society was named to meet a subcommittee from the State Hospital Association to discuss anesthesia. We have, after five meetings, formulated a report which will ultimately come to this Society. I can say, for your information, that this report agrees that in from three to five years the anesthetic department of the hospitals will be reorganized and headed by a full-time professional anesthetist, certified.

I can also tell you that there are a number of other reasons why it might be not wise to forward this resolution to the American Medical Association, although like all of you here I am thoroughly favorable to the spirit of the resolution.

For instance, there are two states which legalize the nurse anesthetist. There are several states where the attorney-general has ruled that the giving of anesthesia is not practicing medicine. The present Attorney-General of this State has declined to rule until this Society brings a trial case.

There is in the middle west now a movement to have all departments of anesthesia organized, under certified specialists and they are away ahead of us in this movement on this question.

All these things seem to bear on the question of whether we should or should not pass this resolution to bring so controversial a matter on the floor of the American Medical Association.

We may be on our way to a solution; in fact it seems perfectly possible that this state society and the State Hospital Association might lead the way out of this very rank error and show the light to many other states.

A vote was taken and the motion carried.

#### 41. SOCIETY OFFICES

##### Section 14

DR. HAMILTON, of New York: "WHEREAS, the offices of the Society in New York City are in a very inaccessible location, and

WHEREAS, the journey to said offices either for out-of-town members or those living within the



city of New York is thus made unnecessarily tedious, be it

RESOLVED, that the Board of Trustees or Council be requested to secure a more central location for the State offices at the expiration of the present lease."

The Committee on New Business C makes a recommendation that the resolution submitted by County of the Bronx in reference to the location of the executive offices of the Medical Society of the State of New York be disapproved

I move the adoption of the recommendation.

Motion seconded and carried

#### 42 WORKMEN'S COMPENSATION ARBITRATION BUREAU

##### Section 9

On the resolution submitted by Dr Heyd  
'WHEREAS, each constituent County Medical Society of the Medical Society of the State of New York sets up a different procedure for the adjudication of cases that come under the Workmen's Compensation Act, and

WHEREAS, it is apparent that each County cannot afford the necessary expense incident to the creation of an arbitration tribunal, and

WHEREAS, it is highly important that the Medical Society of the State of New York should sponsor and further the idea of arbitration in cases of dispute under the Workmen's Compensation Act, be it

RESOLVED, that the House of Delegates instruct the Executive Committee to set up a Bureau of Compensation Arbitration for the State of New York with regional branches, and further to allocate the costs of the service

To create thereby the precedent of the Medical Society of the State of New York handling Workmen's Compensation Insurance problems"

The Committee on New Business C recommends the disapproval of resolution submitted by Dr Heyd, in reference to the establishment of state wide Workmen's Compensation Arbitration Bureau for the following reasons

(1) *Local Problem*. That such cases in dispute are better understood, controlled and arbitrated by a group or economic committee, in a component county society

(2) *Expenses*. That the establishment of such a bureau would add an increased and unnecessary financial burden on the State Society

I move the adoption of the recommendation

Motion seconded

THE SPEAKER The Reference Committee's recommendation is before you Any discussion?

Dr ROSENTHAL, of New York I am sorry to have to disagree with the recommendation of the Reference Committee I think the Workmen's Compensation Arbitration Bureau is necessary for the whole state Various county societies have problems of difficulties arising between doctors and insurance companies on compensation matters No Bureau has been set up for the handling of these matters except in a few counties We in New York County have been able to some degree to obtain a voice in compensation work through the establishment of this Bureau If you gentlemen disapprove the establishment of such a Bureau and make no provision for the handling of disputes which arise between insurance companies and doctors in compensation work considering the fact that the Report of the Governor's Committee on Workmen's Compensation was thrown out by the

Legislature, how are you going to handle these issues?

Last year eight million dollars was expended for medical costs in New York and in those counties where physicians had authorization that money was segregated to a few If we can eliminate the need for authorization and spread that amount of money to all the physicians in the state, then you can all see that it would add definitely to the income of every physician

Dr ROONEY, of Albany I don't believe I heard the report that we should disapprove the question of arbitration as a principle I think we are all for that I am rather fearful that if this recommendation of the Reference Committee is adopted as it stands, it might be construed to mean that they reject arbitration as a principle

I would move a substitute for the resolution of the Committee that this Society approve the plan of arbitration in relation to medical services under the Workmen's Compensation Law, and that it disapprove the plan proposed by the resolution Further, that it refer the report of the Reference Committee to the Council for such consideration during the coming year as may enable it to put into effect the principle of arbitration as may be established by the bill which will be introduced in the legislative session of 1935

THE SPEAKER Do I hear support for the substitute?

Dr GOODRICH, of Kings I second Dr Rooney's motion

A vote was taken and the motion by Dr Rooney carried

#### 43 ALCOHOL CONTROL

##### Section 18

Dr. HAMILTON, of New York On the resolution presented by the Medical Society of the County of Monroe

"WHEREAS, the Constitution of the Medical Society of the State of New York clearly sets forth the purpose of the Society, 'to secure the enforcement of just medical laws, to enlighten and direct public opinion in regard to the great problems of medicine,'

WHEREAS, the Alcoholic Beverage Control Law, delegating to respective County Medical Societies the responsibility of nominations of local commissions, assigns to the Society an action that is not concerned with a great medical problem and is outside of the proper field of activity of the Society,

WHEREAS, with the probable repeal of the Eighteenth Amendment, the County Societies will have their duties extended in this field,

WHEREAS, the further discharge of such duties will tend to jeopardize the honorable professional standing which the Medical Society of the County of Monroe has sustained in its other activities, it is therefore

MOVED, that the Medical Society of the County of Monroe take a definite stand in regard to its activities in this politico-social problem it is further

MOVED, that this Society go on record as being opposed to further functioning in this field of activity, and be it further

MOVED, that this action be transmitted to the Medical Society of the State of New York both by our delegates at the next annual meeting and in any other way that the Comitia Minora sees fit

The Committee on New Business C recommends that the resolution proposed by the Medical Society of the County of Monroe "That the Society go on record as being opposed to any further functioning in the field of alcoholic beverage" be approved.

I move its adoption.

Motion seconded and carried.

#### 44. SOCIALIZATION OF MEDICINE

##### Section 27

DR. HAMILTON, of New York: Reporting on the following resolution:

"WHEREAS, in the report of our President of the State Society, there is immediate danger for the socialization of medicine by lay bodies, and

WHEREAS, in the *Journal of the American Medical Association* an editorial on May 12th states that there is a trend toward a change in the present form of medical practice, and

WHEREAS, a large group of physicians in New York City have already formulated a plan, be it

RESOLVED, that the Committee on Economics investigate the plans proposed and report at the next session of the House of Delegates."

The Committee on New Business C recommends approval of the resolution submitted that the further study of the problems of Socialized Medicine be continued by the Committee on Economics for report at the next session of the House of Delegates.

I so move. Seconded.

DR. ROONEY, of Albany: There is a report of a committee to be heard later that concerns this very question. I would move you that this resolution of the Reference Committee be tabled, to be taken up at the same time with the report of this other committee appointed by the Executive Committee, when it makes its report.

Motion seconded and carried.

#### 45. SCHOOL VACATIONS

##### Section 20

DR. HAMILTON, of New York: On the resolution submitted by the Medical Society of the County of Chautauqua:

"WHEREAS, the school year in the state does not end until the latter part of June, allowing only July and August for vacation for the children, and

WHEREAS, the Chautauqua County Medical Society did go on record as favoring a shortening of the vacations throughout the school year, that school might be dismissed earlier in June, be it

RESOLVED, that the Medical Society of the State of New York recommend that the State Department of Education close the public schools of the State not later than the middle of June."

It is the opinion of the Committee on New Business C that the subject of the resolution proposed by the Medical Society of the County of Chautauqua in re school year, does not involve a question of general interest to the medical profession and is, therefore, not a proper subject for action on the part of the House of Delegates.

I so move.

Seconded and carried.

#### 46. X-RAY LABORATORIES

##### Section 15

DR. HAMILTON, of New York: On the resolu-

tion introduced by the Medical Society of the County of the Bronx:

"WHEREAS, the making of a diagnosis by means of the x-ray and/or the administration of x-rays, or other radiant energy for treatment, are methods of diagnostic or therapeutic medical practice, and

WHEREAS, the Medical Practice Act makes the diagnosing and/or treatment of disease unlawful for anyone not duly licensed to practice medicine, and

WHEREAS, during the past ten years or more lay persons and lay organizations have established and are conducting x-ray laboratories in which lay persons are examining and/or treating patients by means of x-rays, and

WHEREAS, such lay persons are not properly qualified and are not subject to effective supervision or control, and

WHEREAS, the x-rays in the hands of inexperienced and/or irresponsible persons are in themselves a potential source of injury to the patient, and

WHEREAS, in addition to these dangers x-ray diagnosis frequently requires the administration of potent drugs or chemicals which may be legally administered only by licensed physicians, and

WHEREAS, under these conditions the lay x-ray operator and the commercial x-ray laboratories constitute a menace to the public and in addition are strictly commercial enterprises conducted by business getters who are actuated by the profit motive and who consequently do not feel themselves bound by the rules of medical ethics, but who resort to all sorts of questionable methods to attract a complaisant clientele, and

WHEREAS, by the employment of solicitors, runners and/or other business agents and by the promise of rebates or of favorable or dishonest diagnoses, obtain the patronage of unscrupulous physicians or of business and industrial organizations to the detriment of the patient, and

WHEREAS, because of their illegal activities and the desire for profit they have been unable to attract competent physicians adequately trained in radiology and as a result employ the services of individuals whose education, training and character are unacceptable to right thinking members of the medical profession or to the American Medical Association, and

WHEREAS, the technical diagnostic and therapeutic advances being made in radiology are due to, and dependent upon, properly trained physicians to whom science must look for further progress in the field of radiology, and

WHEREAS, the lay x-ray technicians and laboratories have so encroached upon the practice of radiology that competent and ethical medical practitioners find it more and more unattractive as a field of endeavor, thus endangering the progress and advancement of the science of radiology and the welfare of the public, be it therefore

RESOLVED, that the House of Delegates in convention assembled believes that the practice of radiology whether for diagnostic or therapeutic purposes, constitutes in fact the practice of medicine, and be it further

RESOLVED, that the properly constituted authorities be called upon to take the requisite steps to bar all persons not licensed to practice medicine in the State of New York from the practice of radiology, and be it further

RESOLVED, that if it is the opinion of the Attorney General that nonmedical technicians, practicing radiology are not violating the law under present conditions, such steps be taken to institute legislation which will include radiology in the practice of medicine and to limit diagnostic or therapeutic x ray work to duly licensed physicians or dentists, and be it further

RESOLVED, that our delegates from New York to the American Medical Association be instructed to bring this matter to the attention of the House of Delegates of the American Medical Association at the impending session"

The Committee on New Business C recommends the approval by the House of Delegates of the resolution introduced by the Medical Society of the County of the Bronx relative to the practice of radiology for diagnostic or therapeutic purposes with the following suggested amendment

That if it is the opinion of the Attorney-General that nonmedical technicians, practicing radiology are not violating the law under present conditions such steps be taken to institute legislation which will include radiology in the practice of medicine and to limit diagnostic or therapeutic x ray work to the direct and active supervision and control of duly licensed physicians or dentists"

I move its approval

Motion seconded and carried

#### 47 REPORT OF REFERENCE COMMITTEE ON REPORT OF LEGAL COUNSEL

DR. LEITNER, of Rockland We wish to call attention to the increasing amount of work performed by the Legal Department of this Society

Report this year covers a period of thirteen months An increased number of cases were instituted over the preceding year

Mr Lorenz J Brosnan, our Counsel is ably assisted by his associates, Mr Thomas H Clearwater and Mr William F Martin, and with a very efficient office force, the work assigned to the Legal Counsel has been performed in a creditable manner Due recognition is given to the able cooperation of the officers of the Medical Society of the State of New York

Again we wish to emphasize the growing number of malpractice actions being instituted against members of the medical profession and the need of proper and adequate protection against such actions

The former Chairman of the Insurance Committee the late Dr John A Card worked earnestly to effect the Group Plan of Insurance, and his successor, Dr Frederic E Sondern, has carried on the work of the Committee in a very efficient manner

We note that there were commenced in the present thirteen months recording period, two hundred and thirty actions as against two hundred and twenty five during the previous eleven months reporting period Two hundred and four actions were disposed of as against one hundred and fifty eight during the preceding reporting period

Of the two hundred and four actions disposed of during the reporting period, forty one have been settled In one hundred and sixty actions, judgments were obtained for the defendant after

trial or they have been disposed of through dismissal, discontinuance, or abatement

In three cases only were judgments rendered in favor of the plaintiff

From the report we also note that favorable results were obtained in five cases which were in the Appellate Division

In addition to the handling of the cases it is apparent that the counsel is doing a tremendous volume of work in an advisory capacity to the Officers and members of the Society

This brief summary gives some idea of the amount of work being handled by our Legal Department and the efficient manner in which it is being accomplished

The editorials and case reports covering a wide variety of subjects during the year have been of the same high standard and very instructive to the members

The Committee feels that more attention should be given to these articles and the information contained therein should be compiled and printed in some way for permanent reference

We note that but fifty six per cent of our members are insured under the Group Plan

In conclusion the Committee again wishes to emphasize the great importance of the Group Plan of Insurance and the growing need for adequate protection of the medical profession against malpractice actions

Our Legal Department is in every way worthy of our commendation and confidence

I move the adoption of this report

Motion seconded and carried

#### 48. BROADCASTING

##### Section 17

DR WARREN of Kings Your Reference Committee on New Business B reports on the resolution offered by Dr Wightman

WHEREAS, the various broadcasting stations are being used by some drug and patent medicine manufacturers to exploit and make exaggerated and false claims for their products to the serious danger of public health be it

RESOLVED that the Medical Society of the State of New York go on record as favoring a Central National Clearing Bureau of the medical profession which shall act as a reference committee to confer and advise the broadcasting systems in accepting questionable material"

The Committee approves this resolution, substituting for the words in accepting questionable material' the following As to the propriety of accepting commercial programs advertising various proprietary and household remedies"

The Committee further recommends that the delegates of the Medical Society of the State of New York to the American Medical Association be instructed to submit this resolution and urge its adoption by that body

I move its adoption

Motion seconded and carried

#### 49 UNETHICAL MEDICAL ADVERTISING OVER THE AIR

##### Section 23

DR. WARREN, of Kings The second matter referred to this Committee is the resolution presented by Dr Saxl of New York, is one dealing with the same matter

"WHEREAS, it has become increasingly apparent to members of the Society that advertising over the air has become increasingly more unethical, and

WHEREAS, the County Societies in the metropolitan district, have through their various committees, succeeded in obtaining only a moderate degree of cooperation with the radio broadcasting stations with a view of causing a cessation of unethical medical advertising over the air, and

WHEREAS, the broadcasting stations are calling upon organized medicine for support in the arrangement of sustaining programs, and

WHEREAS, organized medicine and members of the medical profession have cooperated with the broadcasting stations to provide informative medical programs of interest to the public and in the interest of the public health, over the air, and

WHEREAS, the American Medical Association has made arrangement with national broadcasting organizations to provide such sustaining programs for them from the headquarters of the American Medical Association in Chicago, therefore, be it

RESOLVED, that the delegates of the Medical Society of the State of New York to the House of Delegates of the American Medical Association bring to the attention of the House at the impending session in Cleveland, the fact that organized medicine and the medical profession are dissatisfied with the quality of commercial programs advertising various proprietary and household remedies, and believe that these programs are of such a nature as to be inimical to the welfare of the people and detrimental to the interests of the medical profession, therefore, be it further

RESOLVED, that our delegates call upon the American Medical Association to take such steps as they may deem advisable and necessary to cause an improvement in radio broadcasting and a cessation of unethical practice as above outlined, over the air."

Your Committee feels that as this matter deals with the one previously mentioned, namely, the evils of present-day broadcasting of proprietary and patent medicines, your Committee believes that the purpose of the resolution is covered in the resolution just presented, and has no recommendation to make.

THE SPEAKER: The report of the Committee is that no action shall be taken on the resolution. Moved and seconded.

THE SPEAKER: The question before the House is that no action shall be taken on the resolution.

THE SPEAKER: The chair is in doubt. All those in favor of the motion adopting the report of the Reference Committee that no action shall be taken on this resolution will kindly rise. \* \* \* \* Those opposed kindly rise. \* \* \* \* The motion is carried.

## 50. REMITTING OF DUES

### Section 13

DR. WARREN, of Kings: The third matter referred to this Committee was a resolution by Dr. Podvin of the Bronx as follows:

"WHEREAS, it is the practice of County Societies to continue on their roll of membership certain members who are financially unable to pay the regular dues, and

WHEREAS, it is required that the local society remit the amount of ten dollars for each such member to the State Society, and

WHEREAS, this causes a severe strain on the finances of the County Society, be it

RESOLVED, that on the certification of the President and Treasurer of a County Society the State dues for such member be remitted and be it further

RESOLVED, that the member or members thus excused from paying dues shall not exceed five per cent of the number of members in good standing of said County Society, and be it further

RESOLVED, that each member whose dues are thus, remitted shall sign an agreement to pay back to the State Society the amount due as soon as he is in funds."

Your Committee is sympathetic with the spirit of the resolution but cannot approve it, and believes that the responsibility in this matter should remain at least temporarily with the County Society where it exists at present, and so recommends.

I move the adoption of the report.

Seconded and carried.

## 51. "CONTRACT" MEDICAL CARE

### Section 22

DR. WARREN, of Kings: The fourth matter referred is a resolution as follows:

"WHEREAS, the principles of professional conduct established by the Society are/or may be implicated and compromised in plans to provide cheap or 'contract' medical care, therefore, be it

RESOLVED, that we reaffirm our position in these words:

It shall be considered unethical and unbecoming a gentleman and a physician to participate or engage in any plan, scheme or program, of institutional activity for the provisions of medical care through any agency which commercialize such care by solicitation in the form of printed, written or spoken advertisement distributed or displayed to or through lay or nonmedical channels.

And further, the self-appraisal by laudatory claims of unusual or superior character of facility of service, or the setting up by an institution or plan of a schedule of 'cut-rate' fees for medical or surgical care, shall be considered to be the acts of each individual employed or engaged therein, and for which conduct he shall be held accountable to and subject to discipline by the County Medical Society."

The Committee believes that there is no recommendation necessary for this resolution as the subject presented is thoroughly covered in paragraph 31-B of the Principles of Professional Conduct of the Medical Society of the State of New York.

We therefore ask for no action.

## 52. POOLING RESOURCES OF PERSONS WITH LIMITED EARNING CAPACITY

### Section 19

DR. WARREN: The next matter which was considered was the resolution by Dr. Ferber:

"WHEREAS, a Committee appointed by the House of Delegates of the State Medical Society of Michigan, in September, 1931, in its report rendered July, 1933, shows that 92 per cent of

the people receive but 65 per cent of the total annual income of the population, and

WHEREAS, this same Committee in a study of the living costs of this 92 per cent of the population found that it ranged from \$42.00 below to \$443.00 above the family income, and

WHEREAS, this Committee also reports that whenever income was found in excess of living costs, it was also shown that medical care must compete with insurance, transportation, education and inner urges that draw on the reserve that remains over the living expenses, and medical care is always the weakest, least considered competitor, and

WHEREAS, the statistics of the United Hospital Fund in New York show a constant and alarming increase in the attendance in the free dispensaries—the total number of individuals treated in the dispensaries in 1920 being 927,421, whereas in 1932 about 2,500,000 individuals were given free treatment by the doctors in the dispensaries with a total number of 7,623,765 treatments, and

WHEREAS, this alarming increase in the free treatments by physicians was constant and progressive even before and therefore not mainly caused by the depression, and

WHEREAS, this increasing burden of medical charity added to the constantly declining income of the doctor very seriously threatens his economic position, therefore, be it

RESOLVED, that a Committee be appointed by the properly constituted authority of our State Society for the purpose of devising some plan whereby people with limited earning capacity can pool their resources in order to have funds available to pay for their medical care. This Committee is to report to the House of Delegates at the next Annual Meeting.

The Committee feels that there should be no duplication of effort in our organization and as the Economic Committee of our Society is gathering facts and making detailed study of matters presented in this resolution, we recommend that the resolution be referred to the Committee on Economics

I so move

Seconded and carried

### 53 FEDERAL COMPENSATION BUREAU—CHOICE OF PHYSICIANS

#### Section 8

DR. WARREN WHEREAS the procedures established by the Federal Works Administration are inimical to the best interests of the doctor as the Federal Compensation Bureau have refused any form of free choice of physicians,

WHEREAS, the doctors are citizens as other members of the community, they should not be discriminated against in the matter of their professional work, be it therefore

RESOLVED, that the House of Delegates instruct its delegates to the American Medical Association to present the views of this House to the American Medical Association so that there may be established a united policy which will justly and adequately protect the physician.

Your Committee recommends its adoption with

choice of physicians, and established by the do not allow free

WHEREAS, the doctors as citizens should not be discriminated against in their professional work, be it

RESOLVED, that the House of Delegates instruct its delegates to the American Medical Association to present this matter and urge the association to attempt a change of rules of the Federal Compensation Bureau which will allow the injured person free choice of physician.

I so move

Seconded and carried

### 54 REPORT OF REFERENCE COMMITTEE ON THE REPORT OF THE COMMITTEE ON SCIENTIFIC WORK AND ARRANGEMENTS

DR. HEYL, of Westchester Your Reference Committee on the Report of the Committee on Scientific Work and on the Report of the Committee on Arrangements is conscious of the magnitude of the work of these committees

The Scientific Program in its general sessions presents two subjects of vast importance to the practice of medicine. The symposium on Growth and Reproduction should stimulate an interest in the reasonable application of such knowledge which is new and all too often given an unjust hearing or trial because of failure in the past, due to incomplete knowledge and impotent products

The same might be said for the symposium on Forensic Medicine. There may be nothing new under the sun but there are always new and often better avenues of approach to any goal.

There are eleven separate Special Section programs representing a total of some seventy seven different subjects all indicating authoritative presentation of material pertinent to present and future day needs.

Mention must be made of the Scientific Exhibit which alone could supply more information than any one would attempt to assimilate in three days. More than twenty five separate subjects and demonstrations are presented many purposely related to the various Section titles.

The Committee on Arrangements has clearly stated the location order, and plan for the various separate and interlocking meetings sessions, dinners, and entertainments. Utilizing two hotels and a church house, which are in fair proximity, and centralizing in each certain section meetings, with the Scientific Exhibit all in one, they have done well where all could not be housed under one roof. The Committee for the entertainment of the ladies has provided for them an enjoyable interlude.

The promise of The Donovan Affair by the renowned Players' Club including "professional talent, is a noteworthy departure from precedent.

They are to be congratulated for having had the President of the American Medical Association Dr. Dean Lewis accept their invitation to be the guest of the Medical Society of the State of New York and address it at the Annual Banquet, on Tuesday evening. Your Committee sincerely urges all present at the Annual Meeting to include this portion of the program in the proper fulfillment of their schedule.

This Reference Committee can only applaud the efforts of the chairmen and their associates in what they have accomplished.

I move that this report be adopted

Motion seconded and carried

55. REFERENCE COMMITTEE ON PRESIDENT'S  
REPORT

## Section 4

DR. BUETTNER, of Onondaga: We appreciate the President's interest in the practice of medicine in general. The Committee agrees with his views on the practice of medicine by hospitals, medical centers and lay organizations and urge that these practices be discouraged.

We concur in his views that the family physician should examine school children, give toxin-antitoxin, etc.

We recommend the treatment of syphilis by the physician rather than by any clinic.

We commend the President in his efforts to assist the Committee on Public Relations by attending some of its conferences.

We are in favor of the President's opinion on the meeting of County Societies at least once a month and on his views that all County Societies have representatives to work on various committees such as Public Relations, Economics, Legislation, etc.

We approve the idea of a full-time field officer for purposes as outlined by the President.

This committee agrees with the President's views on dues.

We recommend its adoption.

Motion seconded and carried.

56. REFERENCE COMMITTEE ON PRESIDENT-ELECT'S  
REPORT

## Section 5

DR. BUETTNER, of Onondaga: The committee does not agree on all points in the incoming President's report. They appreciate that the practice of medicine must change with the trend of the time and the committee does not feel that they can do justice to this report in the time allotted, but, recommends that the appropriate standing committee or a new committee be appointed to take this matter under consideration and to study it and bring in further recommendations at our next meeting.

We approve the recommendation to inject new blood into our standing committees, insofar as not to impair their present efficiency.

We endorse the recommendation of the President-elect that no member of a Committee be permitted to address any organization on matter under consideration by his committee without sanction of the executive committee.

We endorse the recommendations relative to the new JOURNAL and trust sufficient space will be given to all the activities of the State Societies and its component parts.

We submit the report and ask for its approval.

Motion seconded.

DR. BUETTNER: We recommend that the whole report be re-studied.

Motion seconded.

DR. ROONEY, of Albany: I am rather in doubt as to just exactly what the committee means. I would like to have it clarified. I am going to move a substitute.

I move that we substitute for the Reference Committee's report on the address of the President-elect, to wit: that new blood be infused into the standing committees by the addition to each standing committee of a young new member each year for the purpose of increasing his training and education in the work of the Society. That is the first one. The second one is on an

important matter that has caused the State Society a great deal of trouble in past years, individual members of committees making premature announcements on incomplete and inconclusive work of the committee.

I so move.

DR. BUETTNER: In this report we approve the recommendation to inject new blood into our standing committees so far as not to impair their present efficiency; and endorse the recommendation of the President-elect that no member of a committee be permitted to address any organization on matter under consideration by his committee without sanction of the executive committee.

DR. ROONEY: The substitute motion is that we substitute for the entire report of the reference committee on the address of the President-elect, the President-elect's two recommendations with no other matter.

Motion seconded and carried.

## 57. OSTEOPATHY

## Section 6

DR. MASTERSON, of Kings: Your Reference Committee on Report of the Committee on Legislation reports on the following resolution:

"WHEREAS, osteopathy is a system of treating disease wherein drugs are not used, and

WHEREAS, in the training of osteopaths in the State of New York, the use, nature and action of drugs is not taught, and

WHEREAS, there is a bill (Assembly Int. 2,118, print 2,443) which has passed both Houses of the State Legislature and is now before the Governor, and which would permit osteopaths to use any and all drugs in the practice of their profession, and

WHEREAS, the bill is indefinite in its construction and we believe impossible of administration, therefore, be it

RESOLVED, that the House of Delegates of the Medical Society of the State of New York hereby express its concern for the public welfare, should this bill become a law, and be it further

RESOLVED, that this House of Delegates communicate its concern to His Excellency, the Governor, and inform him of the dangers of permitting unqualified men, who have not the educational requirements established by the regents of the State of New York for those who prescribe drugs and, therefore, respectfully requests the Governor to veto this bill in the interest of the public."

We move the adoption of this resolution and that a delegation to the Governor be sent immediately, and also that the secretary of this Society write a letter to the Governor this evening, enclosing a copy of this resolution.

I so move.

Motion seconded and carried.

58. REPORT OF REFERENCE COMMITTEE ON THE  
REPORT OF THE COMMITTEE ON LEGISLATION

DR. MASTERSON, of Kings: Your Reference Committee approves of the report of the Committee on Legislation. The work required of this Committee is becoming more arduous each year. During the last session of the Legislature one hundred and eighty bills having some relation to public health, the practice of medicine, or the activities of physicians were introduced. The Committee had to carefully study each bill, send copies of the more important ones to the Chair-

men of the County Committees with a request for comment. This will give the House of Delegates some slight idea of the enormous work required of this Committee. Many times in the course of the legislative session immediate action is required on some bills and the committee must use their best judgment as to the proper course to pursue. We have every reason to believe that in the future the work required of this committee will be increased instead of lessened.

The question naturally arises as how best to handle this work and how it may become a more effective force in opposing legislation inimical to the public health and the medical profession and having bills passed which we sponsor. The legislative committee, we believe, have done all that could be humanly expected of them, considering that their work is purely voluntary and they have to pursue the practice of their profession for their livelihood.

The report states that our executive officer, Dr. Lawrence, has been very courteously received by the various members of the committees in the Legislature and has been of great assistance to the Committee at Albany. Nevertheless, during the past session the Osteopath Bill passed both houses of the Legislature, the Hospital Lien Bill and Nurse Anesthetist Bill were defeated, and the bill amending the Workmen's Compensation Law that was proposed to cure all the evils in the present law was so emasculated by amendments that we had to let it die in committee. The passing of the Osteopath Bill and the failure of passage of the other bill must not be construed as a criticism of the Legislative Committee or our Executive Officer, but is due rather to our lack of properly organized power at Albany. This statement is made with the full knowledge that the passage of a bill is not always a simple matter.

We would recommend that the bulletins of progress of the Legislative Committee be sent to each member of every County Legislative Committee. This committee would also recommend that the executive committee give serious consideration to the question of employing a qualified executive to assist the work of our executive officer in Albany. We feel that a larger personnel is required at Albany during the legislative session.

I move its adoption as a whole.

THE SPEAKER This recommendation carries with it the employment of additional help at Albany.

THE SECRETARY That has to be referred to the council.

Motion seconded.

A vote was taken and the motion carried.

#### 59 REPORT OF THE REFERENCE COMMITTEE ON THE SUPPLEMENTARY REPORT OF THE COMMITTEE ON LEGISLATION

##### Section 26

DR. MASTERSON, of Kings The Reference Committee emphasizes the necessity of impressing upon the individual members of the County Societies the need of regarding more seriously legislation which is inimical to public health and to the medical profession. We urge that the legislative committees of the County Societies take more aggressive action in promoting expressions of opinion from their membership during the meetings.

The interest of lay groups in matters pertaining to public health is strongly recommended but we feel that it must be initiated and controlled by the County Societies rather than by action of the House of Delegates.

We recommend that the Hospital Lien Bill and the Clinical Laboratory Bill be reconsidered and if possible resubmitted to the Legislature at the next session.

We approve the suggestion that more vigorous action to arouse interest in the Hospital Dispensary Bill and the Nurse Anesthetist Bill be taken in order that they may be more favorably received in the future.

I move the adoption of the report as a whole.  
Motion seconded and carried.

#### 60 LEGISLATIVE COMMITTEE TO MEET EVERY TWO WEEKS

##### Section II

DR. MASTERSON, of Kings In regard to the resolution introduced, requiring the Legislative Committee to meet every two weeks or more often during the session of the State Legislature this Committee recommends the disapproval of this resolution for the following reasons.

We feel that it is unjust to require this Committee to meet at stated intervals, for this would entail undue inconvenience on the part of the members and might not be warranted by existing circumstances. These compulsory meetings would increase the expenses of the Committee greatly. The Chairman and members of the Committee should be entrusted with the decision as to the necessity for calling sufficient meetings to properly protect the interests of this Society.

I move its adoption.

Motion seconded.

THE SECRETARY I introduced that resolution solely with the idea of expediting matters legislative.

DR. ROONEY, of Albany We are dealing with the same old situation. I feel that there is one thing that has got to be done, and that is get a representative of the Legislative Committee in Albany. I think there is another thing that has to be done the Legislative Committee has to meet in Albany and not in New York.

The third thing to be done is to get rid of the impression being created in the Legislature of the State of New York in the last four years, that we have a lobbyist.

I think that this whole question should be referred to the Executive Committee for a study with a view of revamping our whole legislative situation as it is concerned in this Society, and I so moved it as a substitute motion.

Motion seconded.

DR. ROONEY Any criticism that may be directed at the Legislative Committee is directed at the machine and not the man. The machine is antiquated. We can afford, and we should afford, something better.

A vote was taken on the motion to refer this whole matter to the Executive Committee, and the motion was carried.

#### 61 REPORT OF REFERENCE COMMITTEE ON REPORT OF SECRETARY

DR. KRIEGER, of Dutchess Putnam Your Reference Committee feels that the Society cannot sufficiently express its sense of obligation and

# 55. REFERENCE COMMITTEE ON PRESIDENT'S REPORT Section 4

DR. BUETTNER, of Onondaga: We appreciate the President's interest in the practice of medicine in general. The Committee agrees with his views on the practice of medicine by hospitals, medical centers and lay organizations and urge that these practices be discouraged.

We concur in his views that the family physician should examine school children, give toxin-antitoxin, etc.

We recommend the treatment of syphilis by the physician rather than by any clinic.

We commend the President in his efforts to assist the Committee on Public Relations by attending some of its conferences.

We are in favor of the President's opinion on the meeting of County Societies at least once a month and on his views that all County Societies have representatives to work on various committees such as Public Relations, Economics, Legislation, etc.

We approve the idea of a full-time field officer for purposes as outlined by the President.

This committee agrees with the President's views on dues.

We recommend its adoption.

Motion seconded and carried.

# 56. REFERENCE COMMITTEE ON PRESIDENT-ELECT'S REPORT Section 5

DR. BUETTNER, of Onondaga: The committee does not agree on all points in the incoming President's report. They appreciate that the practice of medicine must change with the trend of the time and the committee does not feel that they can do justice to this report in the time allotted, but, recommends that the appropriate standing committee or a new committee be appointed to take this matter under consideration and to study it and bring in further recommendations at our next meeting.

We approve the recommendation to inject new blood into our standing committees, insofar as not to impair their present efficiency.

We endorse the recommendation of the President-elect that no member of a Committee be permitted to address any organization on matter under consideration by his committee without sanction of the executive committee.

We endorse the recommendations relative to the new JOURNAL and trust sufficient space will be given to all the activities of the State Societies and its component parts.

We submit the report and ask for its approval.

Motion seconded.

DR. BUETTNER: We recommend that the whole report be re-studied.

Motion seconded.

DR. ROONEY, of Albany: I am rather in doubt as to just exactly what the committee means. I would like to have it clarified. I am going to move a substitute.

I move that we substitute for the Reference Committee's report on the address of the President-elect, to wit: that new blood be infused into the standing committees by the addition to each standing committee of a young new member each year for the purpose of increasing his training and education in the work of the Society. That is the first one. The second one is on an

important matter that has caused the State Society a great deal of trouble in past years, individual members of committees making premature announcements on incompleting and inconclusive work of the committee.

I so move.

DR. BUETTNER: In this report we approve the recommendation to inject new blood into our standing committees so far as not to impair their present efficiency; and endorse the recommendation of the President-elect that no member of a committee be permitted to address any organization on matter under consideration by his committee without sanction of the executive committee.

DR. ROONEY: The substitute motion is that we substitute for the entire report of the reference committee on the address of the President-elect, the President-elect's two recommendations with no other matter.

Motion seconded and carried.

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WHEREAS, in the training of osteopaths in the State of New York, the use, nature and action of drugs is not taught, and

WHEREAS, there is a bill (Assembly Int. 2,118, print 2,443) which has passed both Houses of the State Legislature and is now before the Governor, and which would permit osteopaths to use any and all drugs in the practice of their profession, and

WHEREAS, the bill is indefinite in its construction and we believe impossible of administration, therefore, be it

RESOLVED, that the House of Delegates of the Medical Society of the State of New York hereby express its concern for the public welfare, should this bill become a law, and be it further

RESOLVED, that this House of Delegates communicate its concern to His Excellency, the Governor, and inform him of the dangers of permitting unqualified men, who have not the educational requirements established by the regents of the State of New York for those who prescribe drugs and, therefore, respectfully requests the Governor to veto this bill in the interest of the public."

We move the adoption of this resolution and that a delegation to the Governor be sent immediately, and also that the secretary of this Society write a letter to the Governor this evening, enclosing a copy of this resolution.

I so move.

Motion seconded and carried.

# 58. REPORT OF REFERENCE COMMITTEE ON THE REPORT OF THE COMMITTEE ON LEGISLATION

DR. MASTERSON, of Kings: Your Reference Committee approves of the report of the Committee on Legislation. The work required of this Committee is becoming more arduous each year. During the last session of the Legislature one hundred and eighty bills having some relation to public health, the practice of medicine, or the activities of physicians were introduced. The Committee had to carefully study each bill, send copies of the more important ones to the Chair-



Societies in the collection and organization of such material. This would require the services of full-time medical man, though his employment may not be feasible at this time.

I move the adoption of the report.

Motion seconded and carried.

#### 65. REPORT OF REFERENCE COMMITTEE ON REPORT OF COMMITTEE ON PUBLIC HEALTH AND MEDICAL EDUCATION

##### Section 39

DR. CRITCHLOW, of Erie: This report was referred back to this committee for correction. Under "general public health activities" the report now reads:

"In these days, when the fear of 'State Medicine' is ever present in the minds of physicians, any discussion is pertinent and timely, which considers possibilities for enlarging the field of the practitioner's activities. That the work of Health Departments is seriously encroaching on the territory of the private physician few will deny. Can this expansion of departmental activities be checked by allocating to the practitioner some of the duties now assumed by the State? This, in brief, is the question propounded in the Report under review. The committee states its belief 'that this Society can introduce a plan whereby the physician will participate more directly in the field of preventive medicine,' and briefly outlines the essential features that should be embraced in such a plan.

We heartily endorse the recommendation of the committee that the House of Delegates take some action. We are of the opinion, however, if such action goes only so far as to urge County Medical Societies to consider a plan, that valuable time would be lost. We believe more direct action is better; we, therefore, recommend that the Committee on Public Health and Medical Education be instructed to formulate such a plan and refer the same to the Executive Committee for approval."

THE SPEAKER: You have heard the recommendation of the Reference Committee on the matter referred to it. What is your pleasure?

Moved, seconded, and carried that the report be accepted.

#### 66. MATERNAL MORTALITY

DR. CRITCHLOW, of Erie: The recommendation of this committee on its report which was referred back, is now as follows:

"We would emphasize that section of the report dealing with maternal mortality. We approve the recommendation of the Committee that the House of Delegates authorize the Committee on Public Health and Medical Education to submit to the Executive Committee a plan organizing Maternal Welfare Commissions in each County Society and to advise in regard to their specific duties. We so recommend.

At the same time we believe the Committee on Public Health and Medical Education should prepare to correlate the findings of various medical organizations that have already made or in the future may make surveys of the maternal mortality problem. We so recommend.

We approve the recommendation of the Committee on Public Health and Medical Education in their supplementary report that the said Committee be instructed to study the suggested remedial measures on nursing education in New

York State, and report to the Council without delay.

Finally, we wish to express our appreciation of the services of Dr. Farmer and his Committee in bringing briefly but forcibly to our attention the subjects treated in the report under review."

I move that it be adopted.

Motion seconded and carried.

DR. CRITCHLOW: I move the adoption of the report of the Reference Committee as a whole as amended.

Motion seconded and carried.

#### 67. RETIRED MEMBERS

##### Section 69

THE SECRETARY: I have on my desk the names of a number of physicians who have been recommended to the Society by their respective County Societies for election to retired membership. I move that the names be placed in the retired list.

Eugene Baker, Ithaca; Charles S. Benedict, New Rochelle; Samuel J. Bradbury, Lynbrook; George E. Brewer, New York; Sophie U. Chapman, New York; Salo Cohn, New York; Aurelius de Yoanna, Brooklyn; Duane E. Ensign, McGraw; Louis Fischer, New York; Alpheus Freeman, New York; Mary Gage-Day, Kingston; W. Travis Gibb, New York; DeWitt C. Greene, Buffalo; George L. Kilborn, Forestport; William M. Kantor, Bronx; Charles G. Koehler, Brooklyn; William T. McManis, New York; John J. MacPhee, New York; Adelbert H. Mambert, Kingston; Howard G. Myers, New York; Lewis K. Nelf, New York; Cornelius Parodi, Brooklyn; Alfred G. Pfeiffer, New York; George M. Price, New York; William J. Prish, Fredonia; Adolph Reich, New York; Clarence C. Rice, New York; Thomas E. Satterthwaite, New York; Gustavus Schlegel, New York; Gustav Seeligmann, New York; Samuel H. Slose, Brooklyn; George E. Smith, Fredonia.

DR. FLYNN, of Monroe: These men are still practicing medicine?

THE SPEAKER: Yes.

DR. FLYNN: Are they entitled to protection by the State Society for malpractice defense?

THE SPEAKER: I would prefer to give a ruling after having consulted the Counsel. He will be here in the evening session.

DR. FLYNN: I move that the matter be held over until the Counsel has been consulted.

Motion seconded and carried.

#### 68. RESUSCITATION

##### Section 73

DR. ROONEY, of Albany: WHEREAS, the recent widespread and sensational publication of incomplete and inconclusive experimentation in the resuscitation of apparently dead animals has elicited false hope in the minds of the public and has led to intensive propaganda on the part of those societies actively combating proper animal experimentation, and

WHEREAS, this premature and inconclusive work adds nothing to the knowledge already had for years concerning the question of resuscitation, therefore, be it

RESOLVED, that the House of Delegates of the Medical Society of the State of New York, condemn the issuance and the publication in the lay press of this misleading and harmful account of inconclusive work prior to its consideration by the only scientific group capable of evaluating it—the profession of medicine.

THE SPEAKER: Referred to Reference Committee on New Business C.

On motion duly made, seconded and carried, the meeting adjourned to reconvene at 8:00 P. M.

### EVENING SESSION, 8 P. M.

The Meeting was called to order by the Speaker.

#### 69. RETIRED MEMBERS

##### Section 67

THE SPEAKER: On the subject of retired membership, the counsel has arrived and I have had a decision. In reference to the retired membership, I want to read to you the paragraphs of your Constitution and By-laws that apply to the retired membership:

"A member in good standing in his component county medical society reaching seventy years of age may ipso facto have the privilege of applying for retired membership in the State Society. All such applications shall be signed by the President and the Secretary of the County Society of the applicant and then sent to the Secretary of this Society for presentation to the House of Delegates for approval. Retired members desiring to become active members shall apply for such membership to the component county society in the county of the residence of the applicant. Such applications shall be governed by the Constitution and By-Laws of the component county society relative to active membership.

Honorary and retired members shall be entitled to the privilege of attending and addressing the meetings of the Society, but shall not be accorded the other rights and privileges of membership or be subject to assessment."

Under the opinion of counsel of the Society they are not entitled under this By-law to protection in malpractice defense unless it is amended.

In contradistinction to this, this House to-day passed a resolution on a recommendation of the Reference Committee, the recommendation of the Secretary of the Society: "Your secretary feels that an injustice is being done to this class of members, many of whom are still practicing and therefore liable to malpractice suits. He recommends that the right to malpractice defense and the privilege of insurance be granted to them." And the Reference Committee having that before it reported: "We also concur in the secretary's recommendation that the rights to malpractice defense and the privilege of insurance be granted to retired members."

Under the circumstances the Chair rules that unless an amendment to the By-laws to make these recommendations effective be presented tonight, this recommendation is out of order and contrary to the Constitution and By-laws.

THE SECRETARY: I am going to present such an amendment tomorrow morning.

DR. PHILLIPS, of New York: I move that the resolution be taken from the table and become matter for consideration later.

Motion seconded and carried.

THE SPEAKER: We are now considering as the business before the House the applications for retirement.

DR. ROONEY, of Albany: Retirement is not compulsory; it is voluntary and I would move you, to settle this question, that upon the pas-

sage by the House of the motion for the retirement of these members, the Secretary of the State Society be directed to write them at the time he informs them of their retired membership, that under the By-laws by their retirement they will lose the privileges of malpractice defense and Group Insurance and the JOURNAL and Directory, and that they need not accept retired membership if they do not choose and may, by retaining active membership in the Society, continue to receive the privileges of membership. I make that as a motion.

DR. PHILLIPS, of New York: I accept the amendment.

THE SPEAKER: Motion before the House is that the names called by the Secretary this afternoon be voted upon for retirement, that they be notified they need not accept that retirement unless they so desire.

THE SECRETARY: Does that mean that the secretary is going over the heads of the County Societies in regard to these members? The County Societies have retired them.

THE SPEAKER: The Chair rules that if the motion is passed it will force the Secretary to go over the County Societies' heads; if the motion is lost the matter is still before you in the original form for the retirement as it has always been.

THE SPEAKER: Those in favor of the motion made by Dr. Rooney and accepted by the original mover, signify by saying aye.

Motion made, seconded, and carried.

THE SPEAKER: The next order of business before the House will be the report of the Chairman of Reference Committee A.

#### 70. RACIAL DISCRIMINATION

##### Section 30

DR. PODVIN, of Bronx: This is the resolution read by Dr. Leitner near the close of the session in relation to the conditions in Germany in the profession, and the abuses there.

Your committee approves the resolution and moves its adoption.

Seconded and carried.

DR. HEYN, of New York: When we adjourn tonight I would move that we reconvene this House tomorrow morning at nine o'clock. It is essential that a large delegation go from here to Albany to oppose the osteopathic bill and it would be rather harmful to this House to have absentees when there is an election pending or in course of being decided. I therefore, move that it be the order of the day for this House to reconvene at 9 A. M. tomorrow.

THE SPEAKER: And that the first business be the election of officers.

Motion seconded and carried.

THE SPEAKER: The next order of business before the House will be the report of the Reference Committee on Economics.

#### 71. REPORT OF REFERENCE COMMITTEE ON THE REPORT OF THE COMMITTEE ON ECONOMICS

##### Section 29

DR. ROONEY: Gentlemen of the House of Delegates: I shall move the adoption of this report paragraph by paragraph.

"Your committee has carefully reviewed the report of the Committee on Economics and desires to commend their painstaking work as evidenced therein. The brevity of the report

has greatly facilitated the deliberations of your Reference Committee

The Committee on Economics has made no specific recommendations as such your Reference Committee, however, has felt it desirable to make certain changes in the language and to add of its own initiative a few recommendations for the consideration of the House. Practically all of the report is informative, much of which describes the continuation of the work of last year's Committee and the pursuance of the direction of last year's House.

Paragraph one, no change

1 The study and work needed to quickly develop the economies of Medical Service with justice to all requires vast expenditure of time and funds. We have used our endowment of both in an earnest effort to accomplish the maximum possible, over the period of three years during which the Committee has served you in (majority) continuity. The first report (1932) sketched the fields of endeavor which called for study, readjustment, and reform and contained many recommendations calculated to arouse expression of thought and opinion among the membership of the State Society. Many recommendations were adopted, more were referred for further study (most desirable) and a few were rejected. The second report concerned the development of a few projects of surpassing importance, the Workmen's Compensation Law, the Public Welfare Law, the Public Health Council, promotion of preventive medicine, General Municipal Law and its amendments, Veterans' Administration Hospitals, the financing of sickness, physicians and the courts, and an amendment to the Lien Law to protect hospitals, nurses and physicians from exploitation in accident cases. With wise and helpful amendments the recommendations upon these matters were adopted by your House.

I move its adoption

DR. ROONEY I will make a further motion in order to save time, and that is that I will move the adoption of each paragraph and the Speaker will so rule unless there is an objection from the floor. We will not have to put each paragraph to a vote unless there is an objection, the paragraph will be held as approved by the House. I make that motion.

Seconded and carried

DR. ROONEY Paragraph two. In the third sentence of this paragraph we recommend the interpolation of the word 'County' between the words 'organization' and 'and the deletion of the word 'departments'.

2. This the third report, offers for your parliamentary review a few matters only. The year's work has been undertaken with the aim to bring to earliest possible cooperative or legislative completion certain important projects. This can only be done after prolonged conferences between representatives of various organizations, County and State. It is clear to us that reform in hospital economies can best be planned by conferences and agreements between subcommittees of hospital officials and representatives of the County and State Societies. Also improved legislation can be facilitated by conference with State Public Health and Public Welfare officials. What the State Medical Society alone recommends may take years to filter through various official political and legislative media, if ever. With united opinion of

the Society and State Departments reforms may be prompt and conclusive. Most of our year's work has proceeded upon these principles. This report, largely informative, deals with unfinished work undertaken with enthusiasm, and developed to a point where faith in the principle of cooperation seems justified.

I move its adoption

Seconded and carried

DR. ROONEY Paragraph three. In view of the fact that the Bill on Workmen's Compensation introduced this year died in committee, it is recommended that steps be taken to reintroduce the Bill during the next session of the Legislature. We recommend that there be a conference between the members of the State Society, who served on the Governor's Commission with representatives of the Committee on Economics and Legislative Committee with a view of taking advantage of the experience gained during the hearings on the Bill so as to present a more satisfactory Bill for introduction in the Legislature of 1935 and to take steps toward its enactment.

I move its adoption

Seconded and carried

DR. ROONEY Paragraph four, no change

4 *Economics of Hospitalization*—In regard to the re-referred matters under this caption and others in all of which this Committee was to share responsibility with other Standing Committees progress has been made. Our subcommittees were appointed early in the year. After several meetings of the Standing Committee Chairmen with our President, the primary consideration of these subjects were assigned to subcommittees from the various Standing Committees to facilitate action. (This keeps traveling and meeting expenses at lowest possible total.) In January at the meeting of Chairmen of Standing Committees our Committee was asked to prepare agenda for these conferences of subcommittees. These have been prepared, reviewed by our complete committee in meeting, mimeographed and were forwarded to the Standing Committee Chairmen in February. In all probability some of the conferences will have been held before the session of the House of Delegates convenes.

I move its adoption

Seconded and carried

DR. ROONEY Paragraph five, no change

5 In general the Committee reaffirms its views concerning the Economics of Hospitalization excepting those paragraphs disapproved by the Reference Committee and the House of Delegates. Some of these have interested Hospital Directors and Superintendents and are being considered at joint conferences with the Committee of the State Hospital Association reported in paragraph 6 of this report.

I move its adoption

Seconded and carried

DR. ROONEY Paragraph six, no change

6 Interest in the Evans and Crawford Bills of 1933 and in the State Medical Society's approval thereof led the then President of the State Hospital Association to request informal conference with representatives of our Committee. Here it was agreed that if the representatives of hospital administration and of organized medicine could meet discuss and agree upon a solution of any of the problems of mutual interest it would be possible to put cor-

rective measures into effect without delay or the necessity of action by the legislature. Or, should the latter be necessary, that having established agreement, we could jointly support it at Albany. The first informal meeting occurred in July. In November an officially appointed group met our Committee. The following topics were discussed:

Definition of indigency—in relation to medical care.

Principle: The indigent is the ward of the community.

Indigent should pay no fees.

Beds for free hospital care—reserved for indigents.

Hospital rates adjusted to eliminate deficits.

No corporate practice of medicine by hospitals.

Hospital insurance to cover hospital service, not medical care.

Subcommittees were appointed to study the economics of hospital relationship to the practice of:

Anesthesia.

Pathology.

Roentgenology.

Physical therapy.

House obstetrics, and other unit fee schemes.

The subcommittees are actively engaged with their respective problems. As soon as they are ready to report, another joint conference will be called. The State Medical Society and the State Hospital Association will make final disposition of these matters when subcommittee and joint committee actions are reported to them. Subcommittees have met and report progress. Joint committee action may be expected in May or June.

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph seven. No change.

7. In the meantime local units and groups have taken up consideration of the problems in the Economics of Hospitalization. We appreciate that there is constantly a local complexion to such problems. However, the fundamental principles are essentially the same over the State. In Monroe County (including Rochester) a plan of clinic admission control is reported to be working effectively. Erie County has a plan of control. In the Metropolitan area representatives and hospital administrations are conferring on the problem of clinic control and related topics. General agreement has been reached that patients seeking free medical clinic care shall be required to make a financial statement. Some hospitals have put this into effect without waiting for a general official adoption. One institution reports a 10 per cent drop in clinic attendance for the first month. Bronx County investigated one thousand consecutive admissions and demonstrated that only about 48 per cent were justly entitled to free care. Westchester County calculated the value of free care for one year. Based on moderate fees and prorated to the staff members it indicated that each one had donated the equivalent of \$4,400 to the care of hospital patients. In Ontario County the Society contracted with the authorities for a fixed sum to do all county cases. After two years this has been abandoned and they now insist upon a return to a fee-for-service plan. Suffolk County continues its outstanding position in the solution of the care of the poor.

In other states experiments are in progress. Notable work has been done in Philadelphia. The outstanding principle of their activity is that no institution shall share in a fee for a service which only a duly licensed physician can render. In St. Louis a *sworn statement* of finances has been required of all patients soliciting free medical care with a result that free-care cases have dropped about 60 per cent. In Battle Creek, an organization of dentists and physicians, membership open to all licensees, contracted to care for the poor of that city for \$12,000 and the administration costs of the plan amounted to \$1,600 for the disbursement of the first \$6,000—an example of the costs of lay administration.

The details of all these and a considerable number of others are being accumulated and analyzed by your Committee. Out of the experiences of these *trial and error* experiments should come the understanding of principles upon which a planned medical care may be established. It would seem to be the function of this Committee to make contact with and correlate these various activities.

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph eight. In the last sentence of the first paragraph after the word "recognized" add "and successfully put into practice in Detroit and recently in Albany." The paragraph will then read as follows:

8. *Public Health*.—General practitioners of medicine should be the chief guardians of the public health, and no town, city, state or federal program can be complete and efficient without participation of all licensed physicians and utilization of facilities established and made available by them. Outstanding results are on record where this has been recognized and successfully put into practice in Detroit and recently in Albany.

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph nine. No change.

9. *Medical Care of the Indigent*.—We are striving toward the day when provision for the indigent shall be complete and efficient. These persons and families, while indigent, should pay no fees. They should be wards of the community as represented by organized government in village, town, city, county, state or Nation (in order of responsibility). Although indigent they should be accorded the same *free choice* of physicians as other citizens possess. It is the duty and the privilege of all physicians to share in the care of the indigent. The cooperation of the County Medical Society with governmental officers in providing medical service for the indigent is very necessary. This function includes regulation of conduct and of remuneration.

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph ten. Fourth line after the word "in" insert the word "the".

On the seventeenth line eliminate word "elimination," add in its place "exemption now existing." On the nineteenth line, instead of the words "is imperative" add the words "should be repealed." We approve this chapter and strongly recommend that the necessary steps be taken to abolish the above provisions from the present New York City Charter. The paragraph will then read as follows:

10. The financial obligations of the community recognizing these principles (paragraph 9) are considerable, but could largely be met by abolishing extravagance in the hospitalization and free care of solvent persons. Competent medical care at home is often less costly than hospitalization. Care in private general hospitals in large cities (notably in the Metropolitan area) could be secured at less cost than is obtained in the conduct of city hospitals. Germane to this proposition is the urgent need of extending the operation of the Public Welfare Law of the State to the Greater City of New York. In accordance with our recommendation of 1933 (approved by House of Delegates) the exemption now existing of the Home Rule Law welfare provisions of the City Charter should be repealed. This would make many embarrassed private hospitals more nearly solvent and relieve physicians of an unjust burden of charity which should be carried by the community. Moreover, it would render unnecessary any additional hospital accommodations in city hospitals. The desirability of State Society action aiming to accomplish this needed reform in the new Charter of New York City has been urgently presented to the Executive Committee.

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph eleven. We recommend a revision in this chapter as follows:

"The persons and families just above indigency present a problem of special importance. This group is frequently referred to as the white-collared class. Confident and complete medical service is already available to most of these people in most communities. They are liberally provided with most of the luxuries of modern life, but it is stated by many people interested in social welfare that this group cannot afford adequate medical service. Committee believes that these statements are largely exaggerated. However, the problem facing organized medicine is to provide through the services of private practitioners and specialists adequate medical service at a cost within the individual's capacity to pay. Where the ordinary fees for medical services are beyond the immediate possibility of the person or family to meet them, it should become the duty of the profession through the local County Unit to meet the situation by cooperation with the practicing physicians of the community. We recommend the advisability of setting up County Society information bureaus for the direction of such patient to private practitioners and specialists. We believe that while periodic health examinations should be recommended within reason and particularly for the purpose of instituting known preventive procedure and especially in the early age and adolescent group, we feel that the so-called periodic health examination campaigns have often promised more than they could accomplish and add unduly to the cost of medical care. Interested parties have pointed to this procedure as an evidence of the fact that this group in a community is not receiving adequate medical care, whereas the benefits of periodic health examinations have been largely exaggerated."

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph twelve. Approved and it is recommended that this work be continued.

12. Early in the year it was recognized that if the principles presented in paragraphs 8, 9 and 10 were to be brought to fruition in any considerable degree general cooperation of our Society, State governmental departments, and welfare agencies must be obtained. It was also in our records that there was a lack of harmony in the various laws which contain provisions for the care of the indigent. At a conference of State Society officials, State Department Commissioners and charity directors, and members of our committee, the following procedure was planned:

(a) The physical assembly of operative laws having to do with the care of the indigent excluding those dealing with custodial care. (State Commissioner Adie of the Social Welfare Department is providing a research worker for this work.)

(b) The assembling of these into an interleaved pamphlet by our Committee, this pamphlet to be distributed to the officers of this Society, to the officers of State Departments and the charitable organizations for opinion, comment and suggestion as to elimination of faults and introduction of improvements to the end that all laws concerning the care of the indigent shall read identically and to provide efficiently against misunderstandings, maladministration, and abuses. Moreover, it is our hope that in this way the principles presented in paragraphs 8, 9 and 10 can become a part of all of these laws.

(c) All suggestions are then to be formally considered by the officials of State Departments, Welfare organizations and State Medical Society officials and agreement upon needed new legislation secured.

(d) We have the assurances of Commissioners Parran and Adie that when the work is complete, means will be found to publish, in manual form, a single volume which will contain all of the regulations as a guide for the information of those who are charged with the administration and of those who render medical care to the poor.

While this is undertaking a long and very responsible task, we believe that ultimately an admirable service to the people and justice to the physicians of the State will result. Much of the material is already in hand. We hope to have the first copy of the pamphlet edited and in circulation before July 1st. Progress onward to the completed printed edition will depend upon the receipt of returned comments.

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph thirteen. Line twelve—delete the word "dole" and add the word "provision."

In the 21st line, new sentence should read "The State through the agency of local authority is, we believe, wrongfully assuming too large a responsibility in individualized service. In the 17th line after the words "potent efforts" add the words "by the foundations and other interests." The paragraph will then read as follows:

13. *The Medical Care Needs of the Indigent.*—On the one hand, your Committee is aware of a growing volume of complaint that our profession cannot further carry the burden of *free medical care* and of the increasing exploitation

of the traditional charitable practices of our profession. There is a demand for some reasonable compensation for the service which the physician renders for the general good of the community and the exercise of a more strict control of the provision of free care. On the other hand, not a few fear that compensation for the care of the poor will be only a first step to socialization of medicine with its inevitable breakdown of standards. Potent efforts by the foundations and other interests to shape public opinion to some program of planned medical care for the poor and near-poor are obvious and pertinent to the economics of medicine. The State through the agency of local authority is, we believe, wrongfully assuming too large a responsibility in individualized service; while other influences would lead us into the pitfalls of some scheme of *compulsory health insurance*. Volunteer agencies offering free clinic and bed care to the sick are generally in financial distress. The way out of this complex situation is not evident. Your committee has undertaken to collect and put informational matter in proper order. No definite recommendation is possible from the data now in hand.

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph fourteen. Delete everything after the words "STATE JOURNAL" in the 5th line. In explanation, it has nothing to do with anything except the workers in industry, particularly in relation to the A. & P. who have maintained their medical staff. They have a chief of medical service who acts simply as director of this service. Yet an employee of the A. & P. is injured in Oshkosh, Michigan, he communicates with the Director of Medical Service, and if that employee is receiving, in the opinion of the Director of Medical Service, incompetent treatment, he changes the case from that man to some other man who is competent. The A. & P. and certain of the other industries have maintained the service during the depression without any further cuts in their medical personnel, either in number or in money. This is entirely comparable with the reductions that have had to be made in all of these corporations with all their other executives.

Your committee felt that this was simply an isolated instance. It was not general and for that very reason we should delete everything about it, and that is why the recommendation of the committee is to delete everything after the word "STATE JOURNAL."

The paragraph will then read as follows:

14. *Medicine in Industry*.—Our subcommittee has submitted an adequate report of its survey during the year which has been offered for publication in the STATE JOURNAL.

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph fifteen. No change.

15. *Practice of Medicine by Corporations*.—(a) Our subcommittee has reviewed varying situations in this State and elsewhere. Their report is elaborate and most interesting and has been presented for publication in the STATE JOURNAL. Hitherto undiscussed points are raised in this report and a clearer understanding of the actual facts may be had by studying this article when published.

(b) The Counsel of the Society, Mr. Brosnan,

has written a valuable opinion on the subject of the practice of medicine by corporations. This will be published in the STATE JOURNAL at an early date.

I move its adoption.

Dr. Rosenthal commented on the fact that no action had been taken on the matter of corporations practicing medicine.

DR. ROONEY: Your reference committee was a reference committee appointed to consider solely the matter referred to in the report of the Committee on Economics. We have no right to go outside of that report and express our opinion on anything except that which is germane to it.

Motion was seconded and carried.

DR. GOODRICH: Dr. Rosenthal's remarks undoubtedly impressed some of the members of this House who perhaps did not recall that a year ago the committee recommended that the Attorney-General bring suit against some corporations for practicing. That was in the hands of the Executive Committee and ourselves and we felt that on their action we could rely and therefore there was no attempt to make further recommendations along that line although we believe, just as Dr. Rosenthal does and just as the executive committee does.

DR. ROONEY: I understand that another resolution will be introduced tonight or tomorrow morning in relation to this matter.

Paragraph sixteen. The 6th line "rediscount" instead of "discount." The paragraph will then read as follows:

16. *Financing Sickness*.—We have, in accord with instructions, continued this study. We are encouraged to believe that when the banking industry has become less apprehensive of the general economic conditions, some plan of rediscount facilities will be arranged for handling large credits of medical care. This is the crux of the problem. Many collection agencies and discount companies continue their practice of frauds.

We have specifications of standards and a provisional program for the control of these affairs. The establishment of a list of accepted firms entails certain costs of administration. When the money to cover the expense is provided, we shall put our plans into effect.

We recommend that this study be continued.

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph seventeen. Your Committee recommends that the work suggested in this paragraph be undertaken and that the question of an appropriation for same be referred to Council.

17. *The Cost Analysis of Medical Practice*.—No detailed or extended work (urgently needed) has been undertaken this year because it has been deemed wise to avoid the necessary expenditure at this time.

I move its adoption.

Seconded and carried.

DR. ROONEY: Paragraph eighteen. Approved with no changes.

18. This committee assisted the 140 A. M. A. *Approved Roentgenologists* of the Metropolitan area in the complete organization of its group. The New York Society of A. M. A. *Approved Roentgenologists* is now committed to the economic problems of this specialty practice, to

encourage higher standards of conduct and to combat those tendencies which may demoralize such standards

The by-laws of this organization prescribe 'The acceptance of membership automatically waives any and all rights to claim based on any disciplinary procedure on the part of the Society or its officers, for libel and/or slander against any or all members of the Society', indicating that this Society is set up for the purpose of self discipline

I move its adoption

DR ROONEY Paragraph nineteen The first paragraph is approved The second paragraph should be deleted This question is now being considered by other committees and resolutions have already been introduced on this subject before the House

The paragraph will then read as follows

19 Radio—There is no censorship exercised over the advertising programs The public is receiving a vast amount of misinformation Self diagnosis and self treatment are encouraged and health habits and regulations of questionable virtue are being promulgated The public health aspect of this belongs to another committee The economic implications are fundamental and considerable

I move its adoption

Seconded and carried

DR ROONEY Paragraph twenty No change 20 Acknowledgment is hereby made of the regular receipt of the following publications and communications, by the Economics Committee

(1) Bulletins from Legislative Committee, Medical Society of the State of New York, relative to bills being submitted in Albany

(2) Bulletin of Medical Society of County of Nassau

(3) Westchester County Medical Bulletin, Westchester County Medical Society Monthly Bulletin

(4) Health News, Department of Health, Weekly Bulletins

(5) Social Welfare Bulletin, Department of Social Welfare, Albany, N Y Monthly Bulletin

(6) Detroit Medical News Wayne County Medical Society, New York State Weekly Bulletins

(7) Calhoun County Medical Society Bulletin, Battle Creek, Michigan Occasional Weekly Bulletin

(8) Minutes of the Commission on Medical Economics Philadelphia County Medical Society Philadelphia Pa

(9) Illinois Medical Journal

I move its adoption

Seconded and carried

DR ROONEY Paragraph twenty one No change

21 To each of the component county societies of the State Society all minutes of our Committee's meetings have been forwarded Minutes were supplemented by a series of bulletins We have exchanged minutes with the Economic Committees of other State and County organizations The Committee now has equipment to render such communications in a more acceptable form in so far as mechanical composition is concerned

I move its adoption

Seconded and carried

DR ROONEY I move the adoption of the report of the committee as a whole and as amended

Motion seconded and carried

## 72 PUBLIC HEALTH COUNCIL

DR. ROONEY Your Committee recommends that the constitution, powers and potentialities of the Public Health Council be referred to the joint consideration of the Committees on Public Health, Public Relations and Economics, with legal counsel for report at the next Annual Meeting of the House

This committee also recommends this joint committee consider the importance that at least two of the three physicians be members of this Society now active in the practice of medicine, and not Public Health officers, or employees of the Department of Health and who shall be chosen from a list of not less than thirty recommended to the Governor for such appointment by the President of the Medical Society of the State of New York The purpose of that is this, as the former paragraphs of the report of the Committee on Medical Economics have shown you—paragraph 34—it states Of the six members at least three must be physicians experienced or trained in sanitary science and one must be a sanitary engineer As a matter of fact, under the present law there is but one man, one physician on the Public Health Council at this date who has ever been in the active practice of medicine Now, for a body that has such power your Committee felt that there should be some provision by which a proper representation of the active profession should be on the Public Health Council

I am interested to know what happened to the report made last year referring this most important matter to these joint committees, of which I have heard no report today

DR ELLIOTT, of Kings The chairmen of the committees met and discussed how to undertake this work It was first proposed to bring all the committees together, it was finally agreed that that would be a waste of time and money, and it was finally determined that the Committee on Economics should draw up an agenda for study by a subcommittee That has been done

It is a very large undertaking and we have asked along with the Public Relations, Public Health and Medical Education that we may have your indulgence to give this whole field the time and careful study which it deserves

DR ROONEY This recommendation is specific It says this and this shall be done and a report shall be made at the next meeting of the house It was not a question of whether there is expense or no expense

Now I will move that this matter be referred and report be made to the next meeting of the Council

Motion seconded

DR FARMER I wonder if the Chairman of the Reference Committee is aware of the fact that this State Society has already made resolutions to that same effect when they accepted the report of the Joint Committee to study the Governor's Health Commission That Committee made a resolution practically covering all of these recommendations and the State Society adopted it So that we are already committed to that program

DR. ROONEY: Do the recommendations of this committee provide that three of them should be active practitioners of medicine, none of whom should be either sanitary or public health officers, or the like?

DR. FARMER: The report is not exactly in those terms, but I think the verbiage is pretty plain. We did state that the appointment should be made from a panel of names submitted by the State Society to the Governor.

DR. ROONEY: May I ask again the question: Does this recommendation state that three of these men shall be active men in the practice of their profession who are neither public health officers or sanitary officers employed by the state?

DR. FARMER: I cannot answer that definitely.

DR. ROONEY: I move that the Committees on Public Health, Public Relations, and Economics, in association with legal counsel of the Society consider this subject and make such recommendations as will provide that this Joint Committee consider the importance of the fact that at least two of the three physicians on the Public Health Council be members of this Society now active in the practice of medicine and not public health officers nor employees of the Department of Health and who shall be chosen from a list of not less than thirty recommended to the Governor for such appointment by the President of the Medical Society of the State of New York. And that they report to the September meeting of the Executive Committee.

DR. SCHIFF, of Clinton: I offer a substitute motion: That in place of referring this matter back to these committees, that it be called to the attention of the Council for action. On the Council are the chairmen of these standing committees and they always have the advantage of consultation with regular counsel, and I believe he would get the action he wants if he would accept that substitution.

DR. GOODRICH, of Kings: I second the motion.

DR. ROONEY: It should be referred to the Committees for action. They are the ones to act. The Council is a deliberative body.

THE SPEAKER: The substitute motion is before you. All those in favor signify in the usual way \* \* \* \* all those opposed \* \* \* \*. The Chair is in doubt.

THE SPEAKER: Those in favor of the adoption of the substitute motion made by Dr. Schiff will kindly rise \* \* \* \*. Those who are opposed to the substitute motion kindly rise \* \* \* \*. The chair announces the vote fifty-six in favor and fifty-five opposed. The motion is carried.

THE CHAIRMAN: The substitute motion was carried. That does not dispose of the question because the substitute motion simply referred the matter to the Council.

DR. ROONEY: We have gotten action!

## 73. RESUSCITATION

### Section 68

DR. HAMILTON, of New York: Committee on New Business C approves and recommends the adoption of Dr. James Rooney's resolution in reference to misleading propaganda in reference to resuscitation.

I move its adoption.

Motion seconded and carried.

## 74. CORPORATIONS PRACTICING MEDICINE

### Section 77

DR. ROSENTHAL, of New York: I have a resolution.

RESOLVED, that the House of Delegates request the Council to instruct the Counsel to start suit against the corporations practicing medicine and to determine the legality of such practice.

THE SPEAKER: That resolution will be referred to Committee on New Business C.

## 75. REPORT OF PRIZE ESSAY COMMITTEE

THE SECRETARY: I have a report from the Prize Essay Committee.

The Committee on Prize Essays of the State Society has received four essays. Each of these has merit. The Committee is unanimous in recommending that the Merritt H. Cash prize be awarded to the author of the essay, entitled "Spontaneous Subarachnoid Hemorrhage and Its Relation to the Aneurysm of the Circle of Willis," by Dr. Wardner D. Ayer of Syracuse.

On motion duly made, seconded, and carried, Dr. Ayer was awarded the prize.

## 76. AMENDMENT TO BY-LAWS—RETIRED MEMBERS

DR. DOUGHERTY: The following amendment to the By-laws is now presented for action:

Amend Chapter 1, Section 5, of the By-laws by the deletion of the words "and retired," and the addition of a new sentence "retired members shall have all the rights and privileges of active members without assessment."

THE SPEAKER: The amendment will have to lie over for one year.

THE SECRETARY: The following amendment to the By-laws which was introduced at the meeting held in New York City, April 3, 1933, will now be presented for action:

Chapter 8, Section 1. Twenty-sixth line, second paragraph, delete the words "not to exceed \$200.00" and insert: "A sum to be determined on a per capita basis of membership by recommendation of the Executive Committee and final determination by the Board of Trustees."

The sentence will then read: "Each District Branch shall be entitled to receive a sum to be determined on the per capita basis of membership by resolution of the Executive Committee and final determination by the Board of Trustees."

Amendment seconded.

THE SPEAKER: It is necessary for this amendment in order to prevail, to have a two-thirds majority on a vote. Those in favor of the amendment will rise; those opposed to the amendment will rise. The amendment is lost.

THE SPEAKER: Is Committee C ready to report on the resolution of Dr. Rosenthal?

## 77. CORPORATIONS PRACTICING MEDICINE

### Section 74

DR. HAMILTON, of New York: The resolution offered by Dr. Rosenthal, that the House of Delegates request the Council to instruct Counsel to start suit against a corporation practicing medicine to determine the legality of such practice, is disapproved, and recommends that the pledge given to the House of Delegates in 1931 by Dr. Harold Rypins, Secretary of the



State Board of Medical Examiners, that if, and when the Medical Society of the State of New York furnished him a brief against the Life Extension Institute, that he would exercise all diligence to have the Attorney-General bring such suit. This brief was delivered to Dr Rupins in 1931, and

Recommends that the Secretary be instructed to communicate with Dr Rypins, requesting information as to the status of the proposed suit.

If such suit had not been instituted, it is recommended, that instructions be issued to the Executive Committee, that they request the Attorney-General to bring such suit.

I move its adoption.

Motion seconded.

THE SPEAKER Those in favor of the adoption of the Report of Reference Committee on New Business C on the resolution of Dr Rosenthal, signify in the usual manner, those opposed, motion carried.

THE SPEAKER Is there any further business to come before this House?

DR ROONEY, of Albany I move that this House now adjourn and that it reconvene tomorrow morning at nine o'clock.

The meeting therefore adjourned until Tuesday, May 15th, at 9 A. M.

## ADJOURNED SESSION OF THE HOUSE OF DELEGATES

Tuesday, May 15th, 1934

The meeting was called to order by the Speaker at 9 00 A. M.

### 78 ROLL CALL

THE SPEAKER The first order of business will be the roll call.

The Assistant Secretary called the roll and the following delegates responded.

Frederic C Conway, William P Howard, Edgar A Vander Veer, Lyman C Lewis, J. Lewis Amster, William Klein, Edward R. Cunningham, Louis A. Friedman, Vincent S Hayward, Jacob A Keller, Moses H Krakow, Edward C Podvin, Howard W Davis, George C Vogt, Joseph P Garen, Harry S Bull, Walter G Hayward, DeForest W. Buckmaster, Reeve B Howland, Earl W Wilcox, Leo F Schniff, Louis Van Hoesen, Charles J Kelley, Robert Brittain, Samuel E Appel, William A Krieger, Aaron Sobel, George R. Critchlow, Robert E De Ceu, Harold F Brown, John T Donovan, Albert A Gartner, Edward C. Koenig, Thurber Le Win, Edward A Sharp, Harold J Harris, Charles C Trembley, Sylvester C Clemans, George L Branch, Cecil C. Whittemore, Murray M Gardner, Robert F Barber, John L. Bauer, Alec N. Thomson, Thomas M Brennan, Donald L. McKenna, Cassius H Watson, Simon Frucht, Charles H Goodrich, Charles T Graham-Rogers, Edwin A Griffin, John E Jennings, Henry Joachim, Walter D Ludlum, Thomas A McGoldrick, John J Masterson, Sydney Nussbaum, Joseph Raphael, J Sturdivant Read, Paul E Wesenberg, Alfred E Shupley, James Steele, Luther F Warren, Nunzio A Rini, F Edward Jones, Gerald E. Murphy, George S Pixley, Clarence V. Costello, William A MacVay, Willard H Veeder, Edward T Wentworth, Warren Wooden, Horace M Hicks, James W Bulmer, Everett C. Jessup, Emily D Barringer, Milton A.

Bridges, Walter T Danureuther, Adolph G. De Sanctis, J Stanley Kenney, Ten Eyck Elmendorf, Julius Ferber, B Wallace Hamilton, David J Kalisk, Samuel M Kaufman, Frederick C Keller, George W Kosniak, Richard Kovacs, Otto H Leber, Jacob Mandel, William M Patterson, Nathan Ratnoff, Morris Rosenthal, Wendell C Phillips, James W Smith, N Thomas Saxl, Terry M Townsend, Franklin Welker, William A Peart, George M Fisher, Charles D Quinn, Andrew Sloan, John J. Buettner, William W Street, Albert G Swift, Homer J Knickerbocker, Joseph B Hulett, Moses A Stivers, Sherman M Burns, Floyd J. Atwell, Carl Boettiger, James M Dobbins, Daniel J Swan, H P Mencken, James R Reuling, Jr., Walter C A Steffen, Stephen H Curtis, Augustus J Hambrook, Oscar M Race, Eugene D Scala, George A Leistner, W Grant Cooper, Stanley W Sayer, George S Towne, Dudley R Kathian, William C Treder, David W Beard, Frederick W Lester, Leon M Kysor, Herbert B Smith, Albert E Payne, Luther C Payne, Guy S Carpenter, Wilber G Fish, Frederic W Holcomb, Morris Maslon, Denver M Vickers, Ralph Sheldon, William J Doersfler, Robert B Hammond, Arthur F Heyl, Fred Brilling, Romeo Roberto, George G Davis, Bernard S Strait.

The following Officers, Trustees, and Chairmen of Standing Committees were present.

Frederick H Flaherty, Arthur J Bedell, Ralph R. Fitch, Daniel S Dougherty, Peter Irving, Frederic E Sondern, Samuel J Kopetzky, Floyd S Winslow, Nathan B Van Etten, Grant C Madill, Harry R Trick, James F Rooney, George W Cottis, William A Groat, Thomas P. Farmer, Harry Aranow, Frederic E Elliott, James E Sadlier, Andrew Sloan, C Knight Deyo, Louis A Van Kleec, Clark G Rossman, Raymond G Perkins, Edward R Evans, Stuart B. Blakely, James M Flynn.

The following Ex Presidents were present: Charles Stover, Wendell C Phillips, Martin B Tinker, Thomas H Halsted, Grant C Madill, J Richard Kevin, James F Rooney, Arthur W Booth, Orrin Sage Wightman, Nathan B Van Etten, George M Fisher, James E. Sadlier, Harry R. Trick, James M Vander Veer, William H Ross, William D Johnson, Chas Gordon Heyd.

### 79 TELLERS

THE SPEAKER There being a quorum present, the next order of business is the election of Officers.

The Secretary announced the tellers.

Frederick C Keller, William P Howard, James W Smith, Luther C Payne, Willard H Veeder, H P Mencken, Robert F Barber, James M Flynn, Luther F Warren, N Thomas Saxl, Harry S Bull.

### 80 ELECTION OF OFFICERS

The following officers were nominated and elected.

President elect, Frederic E Sondern, First Vice president, Andrew Sloan, Second Vice-president, Leon M Kysor, Secretary, Daniel S Dougherty, Assistant Secretary, Peter Irving; Treasurer, Charles H Goodrich, Assistant Treasurer, George W Kosmak, Trustee, Nathan B Van Etten, Speaker, Samuel J Kopetzky; Vice-Speaker, Floyd S Winslow, Chairman of

Committee on Legislation, Harry Aranow; Chairman of Committee on Public Health and Medical Education, Thomas P. Farmer; Chairman of Committee on Economics, Frederic E. Elliott; Chairman of Committee on Public Relations, James E. Sadlier.

The following were elected Delegates to the American Medical Association for 1935-1936:

Drs. Edward R. Cunniffe, Thomas P. Farmer, Floyd S. Winslow, Arthur J. Bedell, William D. Johnson, Grant C. Madill, James F. Rooney, Terry M. Townsend, Frederick H. Flaherty, J. Richard Kevin.

The following were elected Alternates to the American Medical Association:

Thomas M. Brennan, Samuel J. Kopetzky, Harry R. Trick, Carl Boettiger, Louis A. Van Kleeck, George R. Critchlow, Emily D. Barringer, Julius Ferber, Andrew A. Eggston, James R. Reuling, Jr.

THE SPEAKER: Is there any other business come before the House?

# 81. PRESENT STATE ASSESSMENT CONTINUED

DR. ROONEY, of Albany: I move that present state assessment be continued for ensuing year.

Motion seconded and carried.

DR. BEDELL, of Albany: I move a rising of thanks in expression of our appreciation of courtesies extended us by our hosts, the Medical Profession of Utica, and the surrounding cities, the City Management, and to the ladies of the Organization.

Motion seconded and carried.

DR. ROONEY, of Albany: I move that House now adjourn sine die.

Motion seconded and carried.

Samuel J. Kopetzky, *Speaker*  
Daniel S. Dougherty, *Secretary*

## INDEX OF MINUTES OF HOUSE OF DELEGATES

(The numbers refer to the sections)

Alcohol Control .....	18,	43	Nurse Anesthetist .....	24
Arbitration Bureau .....	9,	42	Officers Elected .....	6
Arrangements, Committee .....	54		Osteopathy .....	6
Broadcasting .....	17,	48	President-Elect .....	5
Broadcasting, Unethical .....	23,	49	President's Report .....	
By-laws, Amendments .....	10,	76	Prize Essays .....	
Committee Membership .....	5,	56	Public Health Council .....	
Committee Members Addressing Organizations without Consent .....	5,	56	Public Health and Medical Education .....	22a, 39
Contract Medical Care .....	22,	51	Public Relations Committee .....	
Corporations Practicing Medicine .....	74,	77	Putnam County Society .....	28
Council, Report of .....	62		Racial Discrimination .....	30
Councillors, Report of .....	63		Reference Committees .....	
Doctors, Beginning Practice, Location for .....	12,	34	Resuscitation .....	68
Dues, Reduction for Young Practitioners .....	25,	35	Retired Members .....	67
Dues, Remitting .....	13,	50	Roll Call .....	
Earning Capacity .....	19,	52	School Vacations .....	20
Economic Committee .....	29,	71	Scientific Work .....	
Executive Officer, Assistant to .....	58		Secretary's Report .....	
Federal Compensation Bureau .....	8,	53	Socialization of Medicine .....	27
Field Officer, Full Time .....	55		Society Offices .....	14
Graduate Education .....	39		Specialists, Certification of .....	
Laboratories of Clinical Pathology .....	21,	36	State Assessment Continued .....	
Legal Counsel, Report of .....	47		Tellers .....	
Legislation, Committee on .....	26, 58,	59	Treasurer's Report .....	4
Legislative Committee Meetings .....	11,	60	Trustees' Report .....	
Malpractice Defense and Group Insurance .....	7,	37	Woman's Auxiliary .....	
Maternal Mortality .....	66		Workmen's Compensation Arbitration Bureau .....	1
Member Good Standing .....	16,	33	X-ray Laboratories .....	1

## THE DOCTOR AND THE DEPRESSION

An investigation by *Medical Economics* seems to show that the average annual net income of the physicians has declined from \$5,806 in 1928 to \$3,969 at the present time, a falling off of 32 per cent. The figures were reached by averaging the 4,223 replies to a questionnaire sent out to all parts of the United States to large and small cities and towns and agricultural areas. The net income is calculated to be about 61 per cent of the gross income, so that the average gross income would thus be about \$6,500 a year.

It is figured, too, that the more prosperous half of the medical profession get three-fourths of the total net income. That is to say, if the total net income of the entire American medical profession is \$508,032,000 per year, then the upper half of

the list of doctors get \$381,024,000 of it and the poorer half get only \$127,008,000, or an average of \$1,272 per year. The average of the half would be \$5,812 each.

A decline of 32 per cent in net income seems large, but does not look so bad when realized that many of our largest corporations have seen their net incomes vanish entirely turn into net losses during the depression. Some of them are feeling very cheerful over the fact that they are not as deep in the red as last year. Corporations whose net income is only 3 per cent below 1928, are considered fortunate, and may easily happen that the physicians will return to normalcy earlier than their friends in the business world.

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## EDITORIALS

### A Summer Drive for Child Health

Disease takes no vacations, and it is a brilliant stroke of strategy of the National Congress of Parents and Teachers to use our summer vacation months for a determined and vigorous drive for child health. That is a vast improvement over using them merely for play, relaxation, and genteel loafing. These are the months when the little folks are out in the fresh air and sunshine, exercising every muscle in outdoor games, and exercising their lungs in shrieks and yells that torture the nerves and sour the tempers of all the old ladies within earshot.

All this will help put them in splendid shape to start the long pull of the school year in the fall, but more yet is needed. Many of the boys and girls have defects that need correction, and health examinations should be made early in the summer, to give plenty of time for treatment. The aim of the drive is to have every child's health as near perfect as possible when school opens. The local parent-teacher organization should work hand in hand with the doctors to see that every child is carefully looked over and all medical and dental defects taken care of.

Protection against diphtheria and small-pox are, of course, imperative, yet some

parents are so ignorant or careless as to pay no attention to it. Here is where the local health officer and the parent-teachers association can work together in locating children who have not been immunized and seeing that they are given protection. Educational measures to teach the parents what should be done will be timely.

The point is well made by the State Department of Health that waste motion and futile effort will be avoided if the health-officer, the school and the parent-teachers association work together in this drive. Separate efforts will be more or less disorganized, haphazard, and duplicated. There will be an inevitable tendency to "let George do it," and nothing will be done. What is wanted is "the long pull, the strong pull, and the pull all together." Work to improve the health figures for 1935 must begin in 1934.

### The Tide is Rising

The tide of public concern over the deaths of mothers in childbirth is rising higher and higher. The matter is being taken up, not only by medical societies, nursing organizations, and women's clubs, but by American Legion posts and Rotary, Kiwanis, and Lions clubs, for the fathers are naturally and rightly aroused when the mothers' lives are in danger.

The N. Y. Academy of Medicine certainly "started something" by its famous report, and although a storm of criticism has assailed it, the facts have not been denied, and it is supported by findings of the British Maternity Commission, The New York State Department of Health, the Federal Childrens' Bureau, and other nonprejudiced investigators.

Still more facts, indeed, emerge as the discussion goes on. For instance, Dr. Thomas J. Parran, Jr., New York State Commissioner of Health, points out that while the loss of mothers' lives is deplorable enough, the infant deaths outnumber them many times over. Thus last year in this state 1,168 mothers died in childbirth, but more than 3,000 babies died in their first day of life and another 3,000 died in their first month. Think, too, of the homes left motherless and the children left to

run the streets and turn to idleness or crime as the result of maternal mortality, and we have here a black page in our boasted civilization.

Dr. Parran's remedy would be to pay from the public treasury the entire medical, hospital, and nursing costs of childbearing for every woman unable to provide it for herself. He would permit her to pick her own doctor, provided he is competent. This plan has been scored by some as smacking too much of state medicine, and perhaps they are right, but, if so, the critics should propose something better, for any plan, good or poor, cannot be beaten by no plan.

Dr. Howard W. Haggard would awaken everybody to the gravity of the crisis, and get them all busy. He sears with sarcasm the futile sentimentality that sends flowers to the mothers and does nothing to save their lives when their hour comes. It is "a hypocritical gesture," he exclaims, "typical of a people who believe that they can replace a deep obligation by a shallow sentimental flourish!" Meantime 16,000 women in the United States give their lives to maternity every year, "ten thousand of them needlessly—last year, this year, next year, ten thousand lives sacrificed!"

The doctors are already aroused to the tragic situation; Dr. Haggard would also call upon the educators. We educate the coming men and women along many lines that they will never use, but nearly all of them will be parents, and we give them no education at all in parentage. The educator is not to blame; he teaches what the public demands; but he should now rise to the crisis and help change the curriculum to prepare the future home makers to make the homes safe for motherhood. Next Dr. Haggard would summon the mothers whose daughters are expecting children. He declares that one-third of the preventable deaths in maternity are due to failure of the women to avail themselves of facilities that are theirs for the asking. No one has told them. Here is where their mothers have failed. The press has failed, too, in its silence and indifference. On a sinking ship it is "women and children first"; but at home, on land, it is a different story. Chivalry is extinct. Finally, Dr.

Haggard would call upon "Mr. Everyman," the citizen on the street, in the store, the office, the factory, the husband, the father, and, when the worst happens, the widower. He votes for the men who make the laws and enforce them; now let him find out what these authorities are doing to save the lives of the mothers and children of the community. Is care provided for mothers who cannot pay? Are the clinics and hospitals adequate? Is there a competent nursing service? If Mr. Everyman gets busy with a sharp stick, we may be sure that matters will soon be set right.

So the tide rises. Dr. Parran and Dr. Haggard gave their views at a Mother's Day luncheon in New York City, but this vital subject is being discussed all over the land, from the Atlantic to the Pacific, and, as the old saying reminds us, "the rising tide lifts all the ships." It is resistless. Nothing can stop it. It is to be hoped that as the result of all this agitation, the figures on maternal mortality will reveal a great improvement in the not too distant future.

### We Move in the "Best Circle"

If you draw a circle on the map of the United States to include the cities of Rochester and Schenectady in this state, and Hartford, Baltimore and Hackensack, in neighboring states, you will take in all but one of the cities winning the first prizes for their class in the city health contest conducted jointly by the United States Chamber of Commerce and the American Public Health Association. The lone prize winner outside the circle is Palo Alto, far off in California, which takes the prize for cities under 20,000 population. Our own city of Watertown gets honorable mention among cities of 20,000 to 50,000, where Hackensack receives the first award.

Here we have revenge at last for the story of the California town which laid out a beautiful cemetery and had to send east for corpses because California was so healthy. Here we have proof in "cold figures" of another kind that the east is the really healthy place, while poor California only shows up with a prize winner for cities under 20,000. Readers planning

vacation trips to the coast are given the privilege of clipping this item to produce at the right moment when western acquaintances begin blowing the trumpets too vociferously

Seriously, however, it is more than just good luck or coincidence when a group of cities all in one region carry off the banners in a health contest. It does not merely mean that healthful breezes have blown over them, or that lucky stars have rained beneficent influences upon their housetops. It means that the doctors, the health officers, the nurses, have been faithful, skillful, earnest, unremitting in their warfare with disease and death. It is clear as daylight that we have in this circle a region where medical ability is at a high level, where people enjoy a state of health just a bit better than you will find it anywhere else in our broad land.

The health contest finds in these cities the following outstanding advances

- 1 A sustained intelligent interest in public health, particularly on the part of influential laymen
- 2 An increased interest in, and participation in, preventive medical measures on the part of practicing physicians and dentists
- 3 An increase in the percentage of young children protected against diphtheria
- 4 An improvement in both the quality and safety of milk supplies, particularly through increased tuberculin testing of cows and pasteurization of milk
- 5 A more general acceptance and practice of the principle of having a periodic health examination of both children and adults

#### Proper Description of New Therapeutic Agents

Occasionally authors of medical articles fail to describe new therapeutic agents in such detailed form as to allow readers to effect exact reproduction for their own use. Such an instance recently occurred in the pages of the JOURNAL, which escaped, through inadvertence, editorial notice.

In the issue of March 1, 1934, Vol 34, No 5, page 196, Dr H A Butman, M D, L J Schultz, Ph D, and L A Van

Kleeck, M D, in their article, entitled "A New Intravenous Therapeutic Agent for the Control of Peptic Ulcer" described the substance used in general terms as a solution which is 'a combination sodium citrate and sodium chloride buffered to correct hydrogen ion concentration with a buffer salt'. The full detailed formula, supplied by the authors, is as follows:

Sodium citrate	50 grams
Sodium chloride	14 grams
Dibasic potassium phosphate	5.48 grams
Doubly distilled water	1 000 grams

This formula is preserved in 20 c.c. non-soluble Jena glass ampoules. The ampoules and solution are sterilized under a pressure of 35 lbs of steam for 35 minutes. The hydrogen ion concentration is checked either by titration or by the usual colorimetric method and should be 7.9.

## Correspondence

*Anonymous letters will not be noticed. All communications must carry full name and address of the writer, but these are omitted on request.*

### Incomplete Bibliography

To the Editor

My attention has been called to the fact that, in the article entitled "A New Intravenous Therapeutic Agent for the Control of Peptic Ulcer" which was submitted by Dr H A Butman, L J Schultz, Ph D, and myself and published in the March 1, 1934 issue of the NEW YORK STATE JOURNAL OF MEDICINE, Vol 34, No 5, no reference was made to two prior publications of Dr L Winfield Kohn on the same subject, "A New Nonsurgical Treatment for Gastric and Duodenal Ulcer—Preliminary Report," *Pennsylvania Medical Journal* October 1932, and "A New Nonsurgical Method of Treatment for Gastric and Duodenal Ulcer," *Medical Journal and Record*, February 1, 1933.

In both of these articles Dr Kohn describes the use of sodium citrate and sodium chloride in solution properly buffered for intravenous use.

It is clear to us that to Dr Kohn should go the credit for the first report of the use of sodium citrate and sodium chloride in solution for intravenous injection for the treatment of peptic ulcer and that our report should be considered in the light of further experience along the same line.

We regret any embarrassment that this omission may have caused those in charge of the publication of the JOURNAL.

LOUIS A VAN KLEECK, M D

# Society News

## Committee on Legislation

*Special Bulletin, May 23, 1934*

"MEMORANDUM filed with Assembly Bill Introductory Number 2118, Printed Number 2443, entitled:

'AN ACT to amend the education law, in relation to practice of osteopathy.'

NOT APPROVED

This bill eliminates the present requirement of the Education Law that an osteopath 'shall not perform surgery with the use of instruments' and adds a number of provisions which seem to authorize osteopaths to engage in every form of medical practice except the giving of drugs by mouth to cure disease and the performance of certain specified surgical operations.

This bill is objectionable too, because it contains vague, indefinite and unintelligible language. I refer specifically to the authority which it would convey to osteopaths 'to use those agencies incidental to the care of the diseases included in the examinations of the Board of Medical Examiners.' The Department of Education states that because of ambiguous language it would be

impossible to restrict and prevent any type of medical practice other than some types of major surgery.

Although the proponents of the bill have argued that the intent is that surgical practice be limited to first aid and minor surgery, no such limitations are explicitly written into the bill.

While some types of major surgery are prohibited, all other forms of surgery would be permitted, including many operations which would require a high degree of skill and extended practice.

I want to make it clear that in vetoing this bill no question is raised as to the substantial value and usefulness of osteopathy. This is generally conceded and recognized. This bill, however, would authorize osteopaths to give various kinds of treatment in which many osteopaths themselves do not claim proficiency since such treatments are very different from the traditional scope of their specialty.

The bill is disapproved.

(signed) *Herbert H. Lehman*"

## Committee on Public Health and Medical Education

*At its meeting on May 10, 1934, the Committee heard the following address by Dr. Arthur W. Bingham, of East Orange, New Jersey, and believed it worthy of the attention of the entire membership.*

### ORGANIZED MATERNAL WELFARE WORK IN NEW JERSEY

ARTHUR W. BINGHAM, M.D.

*Chairman, Maternal Welfare Committee, State Medical Society of New Jersey*

Organized maternal welfare work in New Jersey was started in 1923 when the Medical Commission for Maternal Welfare of Essex County, consisting of twelve physicians, was appointed by the County Medical Society. Meetings were held each month at first but later every second month, the detail work being carried on by various committees: prenatal, hospital, educational, follow-up, statistical, and finance.

The prenatal committee organized prenatal Work in every part of Essex County following largely the methods employed by the Maternity Center Association of New York City and the Maternity Center of the Oranges, which had been in operation for two years. Prenatal history cards were printed by the commission and distributed without cost to all physicians in the county who wished to use them.

The hospital committee checked up the work of the hospitals, inducing them to use similar record sheets so that the annual reports would be uniform. An obstetrical report is received each year by this committee from each of the leading hospitals in the county, a few small private hospitals

not cooperating as yet. A summary of three years of these reports was published in the *American Journal of Obstetrics and Gynecology*. Directors of one hospital with 66 cesarean sections out of 900 deliveries and another hospital with 44 sections out of 400 deliveries read these reports with the result that in 1933 there were only 21 sections in the former hospital and 11 in the latter.

The educational committee has attempted to present the idea of better obstetrics to the public as well as to the physicians. Many talks have been given by leading obstetricians and one year a drive for better obstetrics was conducted and an afternoon meeting for women was held.

The follow-up committee investigated every maternal death in Essex County by questionnaire at first, but during the past year a paid investigator has made personal visits, using for reports the same blanks which were used in the survey by the New York Academy of Medicine.

The commission started its work in a small way, gradually developing during the past eleven years as the confidence of

physicians has been gained. The work is financed by the Essex County Medical Society. During the existence of the Maternal Welfare Commission, the uncorrected maternal mortality for Essex County according to the State Board of Health has been reduced from 69 to 44 per 1,000 live births and in Newark from 74 to 45 per 1,000 live births.

As a result of this work in Essex County, a Maternal Welfare Committee was appointed by the State Medical Society two years ago, the object being to organize Maternal Welfare Commissions in every county. This has been accomplished in all but one county and we hope to interest this county before long. The work in some counties is much more advanced than in others, but each county has its problems, and time will be required to get the desired results.

The State Committee meets twice yearly with the members of the various commissions. Reports are heard from each county represented. There is also a talk by some prominent obstetrician. One meeting is held at the time of the State Society meeting at Atlantic City in June and the other in Newark in the winter. On the whole, there has been great interest shown and we have had excellent cooperation.

In New Jersey, much of the obstetrical work is done by general practitioners and any plan to improve obstetrics must include them. This is done by allowing them to attend cases in our best hospitals under supervision and subject to certain rules. At Orange Memorial Hospital, which takes emergency and ambulance cases as well as private cases, seventy general practitioners attended cases in 1933. There were 1,045 deliveries with three maternal deaths and only five cesarean sections. Physicians are expected to follow the regular hospital routines, and the following rules are posted in each delivery room:

Consultation with one of the obstetrical staff is required in all of the following cases:

- a all prolonged labors (24 hours),
- b cases requiring cesarean sections,
- c breech presentations (unless very premature),
- d difficult forceps cases or versions,
- e occiput posterior presentations requiring forceps or version,
- f other complicated cases: eclampsia, placenta praevia, etc.

In some hospitals in the county the rule reads "Consultation must be had with a qualified consultant," giving a little more choice.

If the general practitioners are not allowed to attend cases in our best hospitals, they are obliged to use the private nursing homes or keep the patient at home. In neither of these places do they have any supervision nor is it easy to get consultation without considerable trouble and expense. In the supervised hospital, consultations can be promptly given without charge unless the patient is able to pay a moderate fee.

Therefore, we recommend a sufficient number of beds in Class A hospitals where the general practitioners as well as the obstetricians may take their patients, where their work may be supervised, and where they may have the advantage of consultation in abnormal cases.

#### Graduate Education

Thomas P. Farmer, M.D., Chairman  
608 East Genesee St., Syracuse  
COURSE ON PEDIATRICS  
for

Orange County Medical Society  
arranged by Dr. Herbert B. Wilcox, N. Y. C.  
1934  
June 26 Nutrition in Older Children  
Dr. Hugh Chaplin, 108 E. 68th St., N. Y. C.  
September 25 Deficiency Diseases  
Dr. A. A. Weech, B'dway and 167th St., N. Y. C.  
October 30 Symptomatology  
Dr. Howard R. Craig, 175 E. 79th St., N. Y. C.  
November 27 Behavior Problems in Children  
Dr. Ruth Morris Bakwin, 132 E. 71st St., N. Y. C.  
December — Congenital Syphilis  
Dr. John Caffey, B'dway and 167th St., N. Y. C.  
(The exact date will be determined later.)

#### FAITHFUL ARE THE WOUNDS OF A FRIEND

The older practitioners who may be perhaps a bit rusty in their ideas and methods are given a prod with a sharp stick by Dr. Malford W. Thewlis of the *Medical Times*, who goes on, however, to add some helpful advice on how to keep up to date. He thinks in the first place that there are too many "outdated practitioners," and he notices that the young practitioners just fresh from medical school seem to go ahead. Judging from the success of many of these younger men we might take it for granted that the public wants a new deal in medicine. Many of the older practitioners will be forced out of practice because they are outdated. Others will come out

on top because they will study the latest methods and some will even go back to medical school. It wouldn't be a bad idea, Dr. Thewlis suggests, for every practitioner who has been in practice for twenty years to go back to medical school for three or six months. With his years of experience he will be able to grasp the newer methods much quicker than the younger practitioner, when he returns to his practice he will find he can compete with the recent graduate. Patients to-day demand much more than they did formerly: they want thorough examinations, performed with speed, and they want the latest view on every subject they consult you about.

# Books

## BOOKS RECEIVED

**Diet and Personality.**—Fitting Food to Type and Environment. By L. Jean Bogert, Ph.D. 12mo. of 223 pages. New York, The Macmillan Company, 1934. Cloth, \$2.00.

In this book the author sets out to classify the dietary needs according to the type of person. To use her words, "A great deal of ill health may be caused by people eating food which is not suited to them." One of the most uncertain features of diet books is that no two books are in agreement as to what constitutes a particular diet. But even if we should discount this phase of dietotherapy, there is the element of self-dieting which is never reliable.

One cannot find fault with this book. It follows the pattern of most popular books on that subject, and will merely serve to enlarge the layman's choice of books without offering him anything particularly distinctive.

EMANUEL KRIMSKY

**Combined Text-Book of Obstetrics and Gynecology.**—For Students and Medical Practitioners. By J. M. Munro Kerr, and others. Second Edition. Octavo of 1100 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$10.00.

The idea of a combined textbook of obstetrics and gynecology is good, yet of doubtful practical value. This book is big enough, yet it covers each subject in very sketchy fashion. Nothing can take the place of a good textbook on obstetrics—even three volumes of obstetrics and gynecology. For medical students, however, this book may be useful, for only fundamentals are included.

It is curious to find that spermatozoa live three weeks, and that intra-uterine douche tubes and laminaria tents are still advocated and pictured; vaginal douches are advised for subinvolution in the puerperium. All the old obsolete methods of infant resuscitation are graphically described, but there is no mention of the new knowledge of asphyxia. In describing the lower-segment cesarean, only the transverse out of Kerr and Hendry is described. The chapter on prolapse is good.

CHARLES A. GORDON

**A System of Clinical Medicine.**—Dealing with the diagnosis, prognosis, and treatment of disease for students and practitioners. By Thomas Dixon Savill, M.D. Ninth Edition. Octavo of 1063 pages illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$9.00.

The fact that this is the ninth edition, in itself, speaks for the popularity and importance of this book. The new edition has been rewritten but the general principles observed in the previous volumes plus new and special features have been added. The author has carried on the basic and important fundamentals of teaching that he acquired from such eminent and competent workers as Charcot, Murchison, Bristowe, and Broadbent.

This book, in the opinion of the reviewer, is in the same class as Osler. These are two of the best single volumes on medicine. The author throughout follows our natural clinical history of disease and gradually elaborates on the basis of symptoms and the pathological changes which underlie those symptoms.

H. M. FEINBLATT

**Life-Giving Light.**—By Charles Sheard, Ph.D. 12mo. of 174 pages, illustrated. Baltimore, Williams & Wilkins Company, 1933. Cloth, \$1.00.

This book, while of only 174 pages, brings together in most readable form the major steps through which biological physics has climbed in its pursuit of knowledge. It takes us from the earliest days of glowing embers to the question of "cold light," and its application in the near future. Modern complicated conceptions of the physics of light are well summarized; and what is most important of all, the data are collected from reliable sources to which reference is made, and one soon learns to put reliance in the statements because it is possible—particularly for the specialist—to check certain portions of the text.

Chapter V, "Making the Invisible Visible" deals with optical glass, the magnifying power of microscopes and telescopes, dark field illumination, the ultra microscope, and the use of the X-ray, etc., in gaining information about electrons and electronic speeds. The reviewer feels that he can not only recommend this work very strongly to ophthalmologists, but also to any intelligent mind interested in the progress of the times.

JOHN N. EVANS

**Surgical Clinics of North America.**—Published every other month by the W. B. Saunders Company, Philadelphia and London. Per Clinic Year (6 issues). 1933. Cloth, \$16.00; Paper, \$12.00.

**VOL. 13, No. 1, FEBRUARY, 1933. (Pacific Coast Surgical Association Number.)**

In this issue a large number of short papers touching upon all the important questions of surgery have been collected. Interesting case histories as well as short essays are skillfully blended into a complete volume, which is both instructive and absorbing.

**VOL. 13, No. 2, APRIL, 1933. (New York Number.)**

The April issue comes from the hospitals of New York. The Memorial and Mount Sinai Hospitals are represented by many excellent papers of practical value.

Transfusions and their attendant dangers are discussed by R. E. Stetson. Cancer is given a prominent place among the forty contributions. The volume is well illustrated.

**VOL. 13, No. 3, JUNE, 1933. (Lohey Clinic Number.)**

This issue is of importance to every surgeon. Diseases of the thyroid come in for a very thorough discussion. Gastric and intestinal resections are discussed by Lahey himself, in his usual fluid, forceful, and instructive manner. He proposes a scheme in dealing with the proximal jejunum in gastrectomies, which is a radical departure from the accepted methods.

Surgery of the biliary system is discussed by Lahey and Clute. The volume, containing almost three hundred pages, is replete with valuable facts from which both the tyro and expert can profit equally.

**VOL. 13, No. 4, AUGUST, 1933. (Mayo Clinic Number.)**

The Mayo Clinic has been and still is a post-graduate Mecca for many an American surgeon. The thoroughness of the work done at the Clinics, as well as the sound conservative judgment exercised by its Members and Fellows have always been reflected in their publications. This issue is no exception. The articles are concerned with practical problems, problems occurring daily in the practice of the general surgeon.

The presentations are to the point and conclusive. The illustrations are excellent.

**VOL. 13, No. 5, OCTOBER, 1933. (Chicago Number.)**

The Chicago Surgeons have sounded a new note in this issue of the Clinics. They have dedicated most of the articles to the surgery of children; a happy thought. These problems are usually different from adult surgery and an illumination of these standards is very timely. Chicago's best have contributed to the subjects of intracranial tumors, acute mastoiditis, acute empyema, pyloric stenosis, etc. Adult problems are also discussed and substantiated with convincing case histories and illustrations.

**VOL. 13, No. 6, DECEMBER, 1933. (Pacific Coast Number.)**

This issue is edited more like a compendium of case histories than other numbers of this famed series. Among the numerous cases, some of which are extremely rare, we find a wealth of practical information of the more commonly observed surgical problems. This fact makes the issue particularly attractive to the general surgeon in his quest for scientific solutions of the baffling problems he meets in his daily practice.

GEO. WEBB

**A Synopsis of Surgery.**—By Ernest W. Hey Groves, Tenth Edition. 16mo. of 693 pages. Baltimore, William Wood & Company, 1933. Cloth, \$5.00.

This compend of surgery is written on the basis of experience by one who has had the advantage of teaching students in medicine in the British Empire. Like the finished work of the English writers, this book is systematic, orderly in presentation, conservative in treatment and logical in outline. More a reference book than an exposition of surgical technic or procedure. The book has been rewritten every few years and this edition brings the advances in surgery up to date. This includes radium treatment and the surgery of the sympathetic system. A good book for every surgical library.

EUGENE W. SKELTON

**A Short Encyclopaedia for Nurses.**—By Evelyn C. Pearce. Octavo of 625 pages, New York, Oxford University Press, 1934. Cloth, \$3.75.

Not only is this unique encyclopaedia a panoramic scroll unrolled completely the essentials of nursing care, and made by heroes and heroines to the world; but also it is compiled for a vast amount of reading and the material found in this book is scattered among many large heavy volumes. A wealth of knowledge is compiled in six hundred and twenty-five pages.

LAURETTE A. STOWE



## THE FAMILY PHYSICIAN—PAST, PRESENT, FUTURE

ANDREW MACFARLANE M D

*Albany*

The training of physicians fifty years ago is a pathetic picture from our present scientific point of view but was effective in developing sturdy, reliant practitioners of medicine. The students needed no scholastic equipment except the 3 R's and could obtain medical degrees without even having attended clinics, lectures, or demonstrations. All they had to do was to sign up with preceptors, pay for two courses of lectures, each of four months' duration, and pass a cursory examination given by a medical faculty or committee in order to practice medicine.

Most of the medical schools were proprietary, contained no laboratories except the chemical, had no pathological or bacteriological departments, and except for a few clinics there was no attempt made to give bedside instruction to the students. Medical conditions were somewhat better in the great medical schools of New York, Boston, and Philadelphia, but even these were sadly lacking in practical training. It was at this time that the Johns Hopkins Medical School was organized due to the sad state of medical training in the United States and under the enthusiastic and brilliant leadership of Osler, Welsh, Halstead, and Kelly a new era started in medical training comparable with the best in Europe.

The one redeeming factor in this picture was the preceptor with whom the student had to register for his entire course. If he was a man of sterling character, keen observation, and of high ideals, like Dr McClure in the Bonnie Brier Bush, the student went to a real university and imbibed real medicine as he drove around in the doctor's buggy. In my day, registration in the office of Dr Albert Vander Veer was much sought after and almost

equivalent in value to the work done in the medical college.

The physician of that day had little or no comprehension of contagion or infection and based his medical knowledge largely upon personal experience, the value of which depended upon the keen observation and acumen of the observer. He carried a case filled with nauseous drugs in powder or liquid form, a few knives or other simple instruments very rarely a clinical thermometer (suggested by Allbut in 1867), and a stethoscope (developed in 1869).

The crude diagnosis of the patient or the family was often accepted. This relieved the physician from that responsibility and flattered the cleverness of the family. These hard-working pioneers ate very heartily of heavy foods, often not properly protected from decay and at times drank overmuch of strong liquors. The remedies of those days, emesis, catharsis, and bleeding, were indicated in many patients but carried to extremes or unwisely employed did much more harm than good.

Why therefore has there been a halo of romance developed about the old-fashioned doctor? He did not comprehend contagion, infection, nor diagnosis in the modern sense, but in times of trial and tribulation he was the trusted counsellor and the tried and true friend of the family. A shrewd observer with much common sense, he did his best and was both *nurse and physician* and gave freely of himself often without price. Then, too, when one keeps ever in mind that 80 to 90 per cent of the sick recover with or without, or even in spite of, treatment, he had very good sporting odds always in his favor for the gratitude of the patient.

A large part of medical work is not the

actual practice of medicine. It is, nevertheless, most valuable and consists in counselling, orienting, encouraging, and sympathizing, all with an understanding of the problems of the patient and his family.

There has always been a something about the practice of medicine which develops the best in man. A physician cannot witness the death struggle of a splendid and much needed head of a family, the excruciating pains of a mother in her desire to give birth to the longed for babe and the helpless struggles of the infant, the idol of the home, fighting vainly an incurable malady without making the physician a better, more considerate, and kindly man, although he cannot comprehend the meaning of these mysteries of life.

Fifty years ago, hospitals were medical almshouses (80 per cent were charity cases), and the sick entered them only as a last resort and left all hope behind—a fear too often justified. No attempt was made to classify patients or to isolate contagious cases, and there was no understanding or appreciation of infection in what was then supposed to be surgery. There was no apparatus or appliance for diagnosis or treatment. Few hospitals had even a modest, efficient clinical laboratory before the beginning of this century. The cost of hospital maintenance was about one-fourth of that at the present time, but the average duration of hospital residence was twice as long and the mortality very much higher.

The work of Pasteur, a French chemist, Lister, a British surgeon, and Koch, a German district physician, marked for mankind the beginning of the most glorious epoch in the history of the world. These convergent discoveries with many subsequent laboratory findings created and developed a scientific understanding of communicable diseases which led to an almost unbelievable evolution in the theory and practice of medicine.

The science of medicine then leaped far in advance of all other sciences not alone in actual technical knowledge but in the tremendous reduction in mortality and in human suffering with a coincident extension of life. It is no exaggeration to state that medicine has already repaid manyfold in the protection of life, the prevention of suffering, and even in the actual saving of money, all the wealth which has been so generously and lavishly bestowed upon it.

The practical blotting out of smallpox, typhoid, yellow fever, cholera, typhus, malaria, hookworm, diphtheria, scurvy, and rickets need only be mentioned. This is a record which is easily the outstanding achievement of our civilization, but it is so universally accepted as to have become a mere commonplace.

The marvels of modern surgery rendered possible by the discoveries of anesthesia and asepsis are well known. The use of technical instruments for x-ray, electrocardiograms, metabolic reactions together with diagnostic tests as Wassermann and those of blood chemistry make modern medicine a veritable wonderland of almost romantic knowledge.

To-day the physician has to take a two-to four-year college preparatory course, thirty-six months in medical school, clinics and laboratories, and eighteen months post-graduate residence in hospitals. He must also pass a rigid state examination in order to practice medicine. All this at a minimum cost of \$16,000 and at least seven to nine years of time easily three times in expense and years what it was.

He carries a bag about the same size as that of his predecessor. It contains a small case of emergency remedies carefully standardized together with a hypodermic syringe, sterile dressings, and instruments. In addition to his clinical thermometer and improved stethoscope it holds a blood pressure apparatus, blood-counting instruments, sterile swabs for diphtheria, tubes for typhoid determination, Wasserman tubes, sterile bottles for sputum in the diagnosis of tuberculosis and of the type of pneumonia, bottles with syringe for blood chemistry determination and glass slides for pathogenic organisms. What is the difference between the physician of the past and of the present? The former had not been given much scientific knowledge but he was a keen observer (Dr. Joseph Bell of Edinburgh—the prototype of Sherlock Holmes), sturdy and self-reliant, the frontier type, a tough guy. He had many difficult problems, but he had to solve them, alone and without aid. He had to give more personal service. As he drove away in his gig from his dying patient, he pondered and thought for hours on the reason for the unanticipated change in the symptoms and what more might have been done for his patient. What more illuminating descriptions of disease than those of Addison, Trousseau,

Niemeyer, and Flint. He was a personal doer both as a physician and a nurse. The modern graduate knows so much more theoretically that he keenly realizes how little of that knowledge is created by himself. He becomes the victim of a huge diagnostic machinery. He awaits reports and unconsciously conveys to the patient his uncertainties in diagnosis. Then it is too often forgotten that the real training of the physician comes after his entrance into practice.

The development of modern medicine has been characterized by certain outstanding manifestations.

(1) The enormous growth of the science of medicine involving many tests necessitating expensive apparatus, great technical skill and experience, and much time.

(2) The tremendous increase in the number of specialists.

(3) The lamentable decrease in the relative number and remuneration of the old-time family physician who has always been the counsellor and friend of the family and the wheel horse in bearing medical aid and comfort to the stricken family, night and day.

The family physician relied upon his knowledge of the patients personal and family history together with his power of observation and long experience with disease processes. Personal physical examination was his sheet anchor, and upon his accuracy and acumen depended his success. To-day the physician relies for his diagnosis not only upon history and physical examination but especially on various laboratory tests which are more exact than the results of physical examinations. The physician is thus often tempted to depend too much upon these extraneous aids, short cuts, and too little upon his own skill and mentality.

The extension of medical knowledge into the recesses of the body and the use of recently discovered local anesthetics has enabled many manipulations and minor operations to be done in the office of the physician-specialist. A goodly fee is gladly paid for such services which, though rarely serious, give great comfort and relief to the patient.

The general practitioner's income has been markedly reduced by the disappearance or decrease of such diseases as typhoid, by the modern treatment of tuberculosis, malaria, diphtheria, rickets,

etc., which formerly produced a considerable part of his fees.

The worthwhile activities of industrial medicine and the splendid work of the state in preventive medicine among school children, in the development of medical clinics for adults, by the oversight of water, milk, and food supplies are responsible for still further reduction in income. The specialists who have invaded every field of medicine and assumed the attitude of super-medical skill, have attracted especially his most lucrative type of patients.

The general practitioner is no longer the central figure in the healing art. He has been squeezed into a helpless and almost hopeless condition between the upper and nether millstones. He now has an average income of \$2,500 per year, about one-third of that of the specialist, yet he is expected to know and do everything. He has allowed himself to be beaten, cowed, and pushed aside. The public has begun to doubt his capacity and usefulness. He shows evidence of an inferiority complex. The motor car has made it easy for his well-to-do patients to consult more or less continually the prominent physicians in nearby centers of population. They call upon him only for emergencies. Everyone realizes how the strain and stress of an indecently low income too often undermines the morale for service and destroys the stimulation to study and progress. An other instance of "progress and poverty," progress in science; poverty in income.

The teachings of medical schools have so stressed the importance and significance of all technical methods of diagnosis that the recent graduate in medicine fears that he cannot efficiently and successfully practice medicine without all these extraneous aids. He does not appreciate that Janeway, Loomis, Delafeld, Osler, Alibut, and many other giants in medicine did excellent medical work by the use of their gray matter and five senses and a broad clinical experience.

He is often afraid to attempt practice in the rural districts because he will be away from the aid of hospitals and laboratories. This lack of self-confidence together with the hard work, poor compensation, inferior schools for his children and few social contacts for his family persuade him to crowd into cities already oversupplied with physicians. The rural sections have become medically neglected and often have to

pay a substantial bonus to secure the services of a young well-trained physician to settle in their community.

Complaints have recently arisen about the present high cost of medical services, and magazines contain articles deploring the latterday commercialism of medical practice. "The High Cost of Babies," "A Cure for Doctor's Bills," "Mr. Brown Pays His Hospital Bill," are typical. These complaints are indeed few in the vast medical service rendered throughout this country and it is surprising that such complaints are not more common.

The reports of the Committee on the Costs of Medical Care have not solved this problem because to a very large extent they have failed to recognize the human elements which play such an important part in the practice of medicine.

The crux of this medical problem is the present and future status of the family physician, the first line of attack—the shock troop. He must be restored to his full rights if progress is to be continued to be made toward the adequate care of the sick and if our entire present medical service is not to be destroyed.

Medical practice to-day can be compared to a modern skyscraper. The foundation and first few floors are the family physicians, then the twenty-five stories above are the specialists — surgery, ophthalmology, laryngology, neurology, obstetrics, gynecology, etcetera ad infinitum. If such a structure has weak or insecure foundations or becomes topheavy, it falls. Every student of medical practice and tendencies recognizes these facts, and all bewail the present plight of the family physician, but no one even offers a remedy. It reminds one of Mark Twain's bon mot about the weather: "Everyone complains of the weather, but no one does anything about it."

The family physician's income is growing rapidly less and less due to competition of the specialist, the disappearance of certain diseases which formerly made up a considerable part of his income, by increasing industrial medicine and by the preventive work of full-time health officers. The only remedy for this condition is more remunerative medical work for the family physician or he will pass off the scene in spite of the many expressed regrets.

All indications point to the fact that from this time on the population of the United States will not continue to increase

to any measurable degree due to the fall in immigration and to birth control whether legalized or not. This country with practically stationary population will occupy the same position as does France to-day. The medical schools, however, are graduating each year 2,000 more physicians than are retired. This means 10,000 more physicians in five years than are needed; 20,000 more in ten years; while the field of medicine each year becomes more and more restricted. This, however, is the problem of the medical schools. They must remedy this condition of overproduction before the medical profession is completely submerged in its struggle for existence. Physicians cannot be burned up like wheat, cotton, hogs, etc.

The slogan, "Adequate Medical Care for Everyone," is naturally appealing, but equally effective would be such slogans as "Nutritious Foods for Everyone," "Comfortable Shelters for Everyone," "Warm Clothing for Everyone." Does anyone expect that the butchers and bakers, builders and tailors will rush to provide these necessities without compensation? Much more important for the health of a community are the cleaning up of the slums, nourishing foods, sanitary dwellings, and warm clothing than all the drugs in the pharmacopoeia. Why load upon the medical profession alone the eradication of this canker sore of civilization? The public too often has looked upon the illness of the slums and the submerged tenth as a cause and not a result of conditions for which everyone is responsible and the physician not more than his neighbor.

The family physician must be saved. Upon his salvation depends the future of the medical profession. This can be accomplished by improving his position in the community and providing him with more interesting and more remunerative work. This can be accomplished by:

(1) The employment of general practitioners in all direct diagnostic public health contacts with the public—The Detroit Plan. Every physician would assume his true position and be directly responsible for the health of the community which in turn would look to him for guidance in all matters of health. He would naturally be the first to see every communicable disease and would be keen as an associate health officer to recognize and report it in its incipency. This has

been strikingly shown by the fact that deaths from tuberculosis since 1900 have been reduced four-fifths largely because physicians have become keen on the diagnosis of early tuberculosis. This development would immeasurably help preventive medicine and restore the true status of the physician in the community as the one who diagnoses, treats, and prevents disease.

(2) The general physician should be furnished at a community institute at little or no expense every diagnostic laboratory and needed in doubtful cases. Such knowledge would often enable the physician to make a correct diagnosis early and would at times save life and often prevent physical suffering and mental torture.

Diagnosis is not a God-given gift but depends upon the intelligent interpretation of the significance of the largest number of facts obtainable. The specialist, outside of technical details and an intensive but limited experience, is not naturally superior to the competent general practitioner in diagnostic ability, but he demands in an obscure case all the facts before he is willing to arrive at a diagnosis. The patient, when he consults the specialist has become so alarmed about his condition that he is now only too willing to undergo any number of tests. If some of these tests reveal the correct diagnosis, the specialist is glorified and the family physician falls in the estimation of his patient. If nothing is found, the patient is now mentally relieved and again glorifies the consultant and damns the general practitioner for not finding out the truth earlier. The cost of such examination to a family in moderate circumstances is a matter of much moment to the family physician but if the expense was made little or nothing, he would not hesitate in a doubtful case which did not promptly get well. The result would be that the family physician would necessarily become more scientific in his outlook upon disease. He would practically be the equal of the specialist and his standing in the community correspondingly elevated.

The community could easily enlarge its present laboratory's facilities so that blood tests, x-ray reports, electrocardiograms, metabolic studies, gastro-intestinal examinations and tests for allergy, hay-fever, skin and deficiency diseases, and arthritic conditions could be made at little or no cost to the patients. The request of the family physician with a history of the case would be sufficient reason for such ex-

amination. This would lead to the early discovery of conditions before they became overwhelming and thus develop personal preventive medicine.

The costs to the community would not be prohibitive. In fact such a diagnostic laboratory might easily be made self-supporting. Regardless of the expense why has not the man of small income—the back-bone of the nation, the right for himself and family to every aid which will hasten his recovery? Must such help be restricted to the rich and to the poor? The great middle class which has always borne the burden has never been fairly treated. One of the greatest evils of medical practice is the frequent treatment of disease without a diagnosis to the fullest extent now available.

MacKenzie emphasized the possibilities of the family physician recognizing obscure symptoms in their early stages and to follow them through their life development and even from generation to generation. This privilege would immeasurably stimulate such observations and lead to incomparable results. The real joy of medicine depends on mastering its mysteries.

The present state medical law is now about fifty years old, and during this time almost unbelievable changes have taken place. The specialties and especially surgery, to day so often involve life and death that no one unless thoroughly competent should be allowed by the state to put the life of anyone in unnecessary jeopardy.

The state should not permit any physician to call himself a specialist except after a special, practical examination and three to five years training in that subject and preferably only after several years of independent work in general medicine in addition to this special training. The state might consider the wisdom of reexamining once or oftener all physicians actively engaged in the specialties and as a result of such tests continue to permit or rescind this right.

The American College of Surgeons has attempted to decrease incompetent surgery by determining the competency of surgeons to become members of their organization. This effort has had little influence on the layman who often has no way to determine the training and experience of the operating surgeon.

The family physician must recognize the fact that he should make use of the modern advances in medicine if he is to continue to

fulfill his part to his patients and not be simply a medical traffic officer in time of danger. He can continue to practice independently as at present, seeking such aid as he may deem necessary from laboratories and consultants.

A modern tendency, however, with much in its favor, is for physicians and dentists to form medical groups in a building designed especially for their needs. The groups are often financially cooperative, but there is always the possibility that some one in the group will become the dominating personality in the organization and the other members subservient and thus lose their individual personalities and freedom. Each physician, however, could preserve his professional independence and simply share in a medical office building, dividing pro-rata the expenses of the office, secretary, and laboratory technician.

There are decided advantages in the private group system for the physician; the professional stimulation arising from a close contact with congenial and progressive physicians in kindred lines of work; the ease of obtaining at once laboratory aids when indicated, the possibility of immediate consultations probably at reduced charges for the patient by the associated office consultants as all the data would be completely presented.

The group system furnishes at a low cost to the individual physician, expert technical and clerical assistants thus taking off the doctor's shoulders the necessary but annoying and too often neglected minutiae of his work, as the keeping of records, correspondence, posting of charges, and making out of statements.

The growth of medical science has been so marked and marvelous that the medical schools have emphasized too much the science of medicine and have placed too little stress upon the art of medicine. The result has been that the practitioner has neglected the small things of medical practice which add much to the comfort of the patients and make up a large part of medical service. There has been developed as a protest, apparently successful cults which depend practically entirely for their success upon massage. In spite of their inferior knowledge of the fundamentals of medical science and the mistakes they must at times necessarily make, they seem to give relief and comfort to many intelligent patients by their manipulations and thus gain much support. The great increase in cults with the accepted tremendous devel-

opment in medical science is a contradiction not seen in any other field of human endeavor and must have a reason.

If the medical student in his senior year and hospital internship would receive thorough and practical courses in massage, hydrotherapy, electricity, light, and heat treatments which he could employ in his practice, much could be done to eliminate these cults, to increase his income, and to strengthen the practical and financial standing of the general practitioner in his community.

The determination of a serious condition at the earliest possible moment may test to the utmost the diagnostic skill of the best physician and also be responsible for some of the increased costs of medical service. A man between fifty and sixty years of age, valuable to his family and community and who has been very well, consults his physician about such a simple and common condition as headache from which he has recently begun to suffer. Headache may be the complaining symptom in at least seventy-five different pathological conditions ranging from constipation, eyestrain, and anemia to cerebral syphilis, brain tumors, and drug poisons. The correct diagnosis, at times necessitating a number of examinations by specialists and of laboratory tests, may prove to be simple and easily remedied, or a serious condition which may require expert care or an immediate operation. These careful and critical examinations are expensive in time and money and the patient often but unwisely may feel aggrieved when nothing organic has been found after so great an expense. If the physician attempts to save the expense involved, with the hope that the condition is simple and self-limited, he may learn too late that he has grievously failed both for his patient and for his own reputation.

This complete examination is being attempted at a number of hospital clinics in the large cities at a moderate cost. This work has, however, antagonized many family physicians as their patients often go independently to the clinics and then later employ other physicians especially if the family physician has overlooked conditions found at the clinic. It would seem best for all concerned that the clinics insist that patients be referred to them from their family physicians or at least ascertain from the patients the name of a physician to whom their findings and records must go. The clinic should at all times impress

upon their patients the value of their family or neighborhood physician.

The complaint of the high cost of medical service is almost always a purely local question and limited except in very exceptional cases to the large centers of population. No one has ever heard complaints about high medical costs in the rural districts or in the smaller cities or by the family physicians. It is a problem restricted to our very largest cities and involves only the charges of the specialists in these communities.

What is the reason for the high cost of medical services by specialists in the metropolitan centers? A physician becomes justly renowned and many patients flock to him for relief. He must necessarily limit the number of patients whom he is physically able to examine and treat. There is only one way in which he can limit the number of his patients and that by his professional charges. Much of his time is spent in teaching, in hospital ward attendance and in research work for all of which he receives no direct compensation, simply the added professional prestige arising from these associations.

No one begrudges the large fees obtained by one, who as a result of hard work and great ability has become a leader in his profession. He necessarily establishes a high standard of charges but unfortunately other physicians doing the same kind of work with unequal skill and ability feel in justice to their assumed reputation, their fees should be correspondingly high.

The public, too, is largely responsible. They do not seem to realize that in large communities there are many equally careful obstetricians, efficient surgeons and meritorious specialists. The apparent desire of the homo americanus especially the one of the female species is usually to have the most expensive in everything as indicative of the best.

Unfortunately, it is difficult for the layman to know accurately the real ability of a physician. Too often the selection is dependent upon chance, a casual recommendation, or whether he is the fashion and the interesting subject of gossip at bridge, luncheon, and dinner tables. It takes a brave woman to announce to her friends that she is going to have a socially unknown accoucher for her confinement or a young surgeon for her operation.

Efficient medical service must not cost more than the recipient can pay. This is impossible of accomplishment under present conditions in obscure and difficult cases in the working class. Each community, however, could easily extend the activities of its present laboratory so that every aid to diagnosis could be given to the physician at little or no cost.

Physicians should receive a just return for their investment in their profession and for their professional work. This could be accomplished by extending the work of the family physician. He should be trained to do much of the work done at present by the specialist and practically all the clinical work of the department of health.

Physicians who achieve unusual skill should be able to earn incomes comparable with those of the leading lawyers and business executives in the same community.

Physicians should not be expected to carry the burden of medical charity work, a communal problem, and are entitled to modest compensation for this work.

The challenge of the future—public health and adequate care of the sick—is only in small part a medical question. It involves and tests the adequacy and efficiency of modern civilization with its poverty, vice, ignorance, bad housing, poor food, and insufficient clothing for the submerged tenth in our country and especially in our cities. If these conditions are remedied, the adequate care of the sick would become a simple problem easily soluble.

The attempt to load all the responsibility for the correction of these evils upon the medical profession is fatuous and will never lead to a true appreciation of the depth and difficulty of this question or to a corrective solution of a problem which is the problem of all and not of a class.

The medical profession has already done a marvelous amount of philanthropic work with little recompense and less credit. It will always be a valuable collaborator, but never will it be able single-handed to clean out this Augean stable of vice, intemperance, and ignorance—the blight of our civilization.

Continued progress in public health arising from a clearer understanding of disease processes and from the resulting advances in preventive medicine is the ultimate goal of all medical activities. This must inevitably lead to a constantly increasing part

played by public health physicians in the medical activities of our complicated civilization. The exact character of these changes cannot now be foreseen, but it takes no prophet to predict that the American people will demand and eventually receive the best possible medical service.

In conclusion let me present for your serious consideration the following thoughts.

(1) The state should permit legalized practitioners of medicine to qualify as specialists only after 3 to 5 years of special training, the value of which should be determined by a practical state examination.

(2) The community should recognize the value of the family physician by employing his services as far as possible in preventive medicine and in providing him

with all possible, practical diagnostic aids.

(3) The medical schools should reduce their student bodies about one-tenth in number. They must recognize that their first duty is to educate efficient physicians and to so train them for family practice that they may render valuable and creditable service to the community.

(4) The general practitioner must justify by his character and type of practice all the glorious heritage of medicine and the splendid aid given him by community and medical school.

He must realize that he is not alone a rugged self-reliant individualist, but that to accomplish his best work in our complicated civilization he must do team work and cooperate with his brother practitioners in his manifold activities.

## ANNOUNCEMENT

The State Department of Health has for several years issued a circular in pamphlet form entitled, "Information for Physicians" regarding the State Department of Health, the Public Health Law, and the Sanitary Code as it applies to the State outside of New York City. The 1933 edition is now running out and, before undertaking revision and reprinting, the Department is eager to know whether any considerable number of physicians use it and believe it helpful. The pamphlet carries advice about phy-

sicians' duties in communicable diseases and advice as to procedure of quarantine, etc.

There is also a "Laboratory Manual" containing full information of the services the Division of Laboratories and Research is prepared to render to those who ask for it in connection with which the Department would like similar information. It is, therefore, asked by the Department of Health that the physicians throughout the State, outside of New York City, communicate opinions to the Department by mail.

## 1934 GRADUATE FORTNIGHT of the NEW YORK ACADEMY OF MEDICINE

The Seventh Annual Graduate Fortnight of The New York Academy of Medicine will be devoted to a consideration of gastro-intestinal diseases. The Fortnight will be held October 22 to November 2.

Sixteen important hospitals of the city will present coordinated afternoon clinics and clinical demonstrations. At the evening meetings prominent clinicians from various parts of the country who are recognized authorities in their special lines of work will discuss the various aspects of the general subject.

A comprehensive exhibit of anatomical, bacteriological, and pathological specimens and research material will be shown. Many of the exhibits will be demonstrated.

Among the subjects to be presented at the evening meetings and in the hospital programs will be:

General principles involved in the diagnosis of gastro-intestinal diseases—medical, surgical, roentgenological

Constipation

Diarrhea

Physiology of the gastro-intestinal tract

Diseases of the pancreas, especially acute pancreatitis and its treatment

Diseases of the esophagus

Functional diseases of the stomach  
Disorders of the gastro-intestinal tract in children—  
infections, management, surgery in infants and children  
Diet in relation to gastro-intestinal diseases in infancy  
Clinical examination of the patient from the surgeons  
and the internists' points of view.  
Demonstrations of diets used in treatment  
Peptic ulcer—medical discussion, surgical discussion  
Carcinoma of the stomach  
Chronic lesions in the paracecal region  
Acute appendicitis  
Peritonitis  
Gallbladder and biliary passages—medical discussion,  
surgical discussion  
Jaundice  
Tumors of the colon  
Diseases of the rectum, including tumors  
Intestinal obstruction  
Diverticulitis  
Colitis, amebiasis, functional disturbances of the colon  
including mucous colitis  
Hirschsprung's disease  
Lymphogranulomata  
Clinical methods and differential diagnosis  
Technic of the gastro-intestinal series  
Laboratory examinations.

The profession generally is invited to attend. A complete program and registration blank may be secured by addressing:

DR. FREDERICK P. REYNOLDS,  
The New York Academy of Medicine,  
2 East 103d Street, New York City.



## PRACTICAL CONSIDERATIONS IN THE DIAGNOSIS AND TREATMENT OF POLIOMYELITIS

IRVING J SANDS M D

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It is of paramount importance for the clinician to recognize poliomyelitis and institute treatment as speedily as possible. A practical consideration of these phases of the subject, therefore, seems opportune.

Anatomically, acute poliomyelitis is a meningo-encephalomyelodisradiculitis.<sup>1</sup> Despite the fact that signs and symptoms are referable to the involvement of only certain portions of the central nervous system, pathological studies of the acute cases reveal a diffuse involvement of the nervous system, with inflammatory changes occurring in practically every part of the central nervous system. Nevertheless, it is a fact that the anterior horn cells of the spinal cord, and particularly those of the cervical and lumbar enlargement, and the nuclei of some of the cranial nerves, especially those of the 7th, 9th, 10th, and 11th, and, in a lesser number of instances, of the 6th, and 12th cranial nerves, bear the brunt of the lesion. At least, the vast majority of cases show this to be clinically true, and the ensuing paralyses are the result of the involvement of these nerve groups. At necropsy one is impressed with the marked edema and congestion of the entire nervous system. The brain generally weighs 10 to 15 per cent in excess of its expected weight. The ventricular system is compressed by the edematous brain tissue. There is marked congestion of the pia, especially at the base and particularly at the pons and medulla. The spinal cord is edematous and congested, and its vessels, especially on the anterior surface, are swollen and tortuous. Sections of the cord and medulla will disclose marked hyperemia of the gray matter and particularly of the anterior horns, which stand out prominently from the rest of the tissue. Microscopically, there are striking mesodermic and ectodermic changes. The pia is edematous and thickened, and its vessels are engorged. There is proliferation of the fibrous tissue, and there is infiltration of lymphocytes, polymorphonuclear cells, and red blood cells. The pia vessels show striking inflammatory changes with infiltration of the Virchow-Robin spaces with lymphocytes polymorphonuclear cells and plasma cells. Hemorrhagic areas are not

as frequent as one might gather from the literature, yet occasionally they are encountered, especially in the anterior horns. The ectodermic tissue shows changes both in the neurocytes and the glial tissue. The motor cells show cloudy swelling, chromatolysis, satellitosis and neuronophagia. The most extensive pathological alterations are found in the motor cells of the anterior horns and in the ganglia of the cranial nerves that are involved in this disorder. One occasionally encounters areas in the anterior horns that are devoid of neurocytes, the latter having been replaced by lymphocytes, polymorphonuclears, and glial cells. The microglia is particularly active in the acute phase. The characteristic infiltration of the Virchow-Robin lymph spaces is particularly evidenced in this disorder.

As previously pointed out despite the diffuse anatomical lesions encountered in the nervous system clinically, the patients present themselves in the following groups:

(1) The meningeal type, in which the predominant picture is one of meningeal irritation.

(2) The bulbar type in which the involvement of the cranial nerves is the most significant clinical picture.

(3) The myelitic type, in which pareses and paralyses of the skeletal and limb muscles and of the diaphragm are encountered.

(4) The bulbomyelitic type, which is characterized by clinical signs referable to the lesions of the cranial nerves and the peripheral motor nerves.

(5) The encephalitic type which is usually associated with signs referable to bulbospinal involvement and characterized by extreme drowsiness, stupor, aphasia, pupillary disorders, sphincteric disturbances, and even convulsion.

To these types may be added

(1) The spreading or Landry's, type, which is characterized by either ascending or descending paralysis involving progressively different groups of muscles, and

(2) The abortive types,<sup>2</sup> which expresses itself clinically in an acute, mild, febrile disorder, with headache, vomiting, malaise,

and general gastro-intestinal symptoms, and which is hardly recognized except during epidemics of poliomyelitis.

The diagnosis is made upon the history of the onset of the illness, the physical examination, and the spinal fluid analysis. The onset of the illness may be characterized as "cerebral" in nature—headache, vomiting, and constipation, associated with restlessness, irritability, insomnia, or more commonly somnolence. On examination the patient appears somewhat apprehensive and anxious and resents the examination. The face is flushed and the patient appears prostrated. The signs of meningeal irritation are pronounced, there being rigidity of the neck and a mild Kernig sign. One must employ considerable tact and skill in eliciting the nuchal rigidity and the tenderness and rigidity of the spinal muscles, particularly in dealing with children. Many devices must be employed in order to bring out rigidity of the spinal muscles. Various signs have been described which collectively come under the general heading of "spine tests." The object of these tests is to elicit the pronounced spasm in the muscles of the neck and of the back. One of the most valuable signs to which my attention was directed by Dr. Emil Smith, resident at the Kingston Avenue Hospital, is the tache. By gently, though firmly, passing the tip of the palmar surface of the index finger, or the angular end of the rubber hammer, across the skin, one elicits a characteristic tache. There ensues a red-brown discoloration on the skin about 1 or 2 cm. in width, which lasts for approximately 1 to 2 minutes. Occasionally this test has proven of value in predicting the group of muscles to be paralyzed, as it seems to be of a segmental character. In those cases which subsequently develop cranial nerve signs, the tache was elicited over the lateral aspect of the neck on the side where the cranial nerves were involved. This test has served the author well in several instances and is not receiving the attention which it merits. The temperature is generally about 101° to 103° F., usually about 102°. The pulse is around 120. The blood count shows between 10,000 and 15,000 WBC, with a polymorphonuclear cell count of 45 to 60 per cent, there being a relative and absolute lymphocytosis. The temperature may continue for 3 to 5 days, and then subside, the patient getting well, having recovered apparently from the meningeal type of poliomyelitis.

In the myelitic type there ensues in a day or two after the onset of the illness weakness or paralysis of a group of muscles of the limbs, abdomen, thorax, or diaphragm. In the bulbar type there is involvement of the cranial nerves, the 7th, 9th, 10th, and 11th being the ones principally involved. Nystagmus is commonly present. Drs. Smith and Fineberg,<sup>3</sup> of the Kingston Avenue Hospital, have recently presented a practical and illuminating article on bulbar poliomyelitis and its treatment as used in the Kingston Avenue Hospital during the epidemics of 1931-1932. They describe bulbar poliomyelitis under the following headings: (1) Those in which there is unilateral paralysis of the palate, with congestion of the pharyngeal wall fauces and mucous membranes, lagging of one side of the palate, and a slightly nasal tinge to the voice, difficulty in swallowing for a day or two, and weakness in coughing, with occasional involvement of one-half of the tongue. The temperature generally subsides in this group in 5 to 10 days, and recovery usually ensues. (2) Bilateral paralysis of the palate with increasing nausea and salivation, uniform congestion of the oral cavity, collection of mucus behind the posterior pillars, inability to expectorate the mucus, labored respirations without supra- or infrasternal restriction, nasal voice, indistinct articulation, marked difficulty in swallowing, especially of liquids, and regurgitation through the nose, and with a very slow recovery and persistence of signs for many weeks. These observers noted that no extension of paralysis had occurred after the temperature had remained normal for 48 hours. In this group of cases they pointed out that involvement of the vasomotor center is invariably fatal. In the bulbo-myelitic type there is a combination of the signs and symptoms encountered in the bulbar and myelitic type.

The spinal fluid is under moderately increased pressure, usually between 120 and 200 mm. of water. The cytology may be from 20 to 1000, or more. Usually in the myelitic type one encounters from 50 to 200 cells; in the bulbar type between 50 and 75 cells, and in the meningeal type from 100 to 300 cells. There is considerable controversy as to the type of cells encountered on the first day of the illness.<sup>4</sup> The author's experience has been that the polymorphonuclear cells predominate if the spinal fluid is examined immediately after withdrawal. After the second day of the

illness, the lymphocytes predominate. The sugar and chloride contents are normal. The colloidal gold curve is of the very mild parenchymatous type. There is a slight increase in globulin.

There is considerable difference of opinion amongst competent physicians as to where, when, and how poliomyelitic patients shall be treated. There is a group whose philosophy is that of therapeutic nihilism,<sup>5</sup> and their principle is to leave the patient alone, making him as comfortable as possible, maintaining that the average case will get well without any active therapy. On the other hand, many in the field believe that there should be an active and early institution of therapy in this disorder. Moreover, poliomyelitis causes such a marked emotional disturbance, not only in laymen but also in the profession that several communities will refuse to have a poliomyelitic patient admitted to a general hospital. Last summer patients were refused admission even to the private pavilion of a well known general hospital because many physicians threatened to withdraw their patients from the hospital if poliomyelitic patients were admitted there. Such an attitude is both unscientific and inhuman, and is based upon sheer lack of understanding of the entire problem. As a matter of fact poliomyelitis is not contagious in the ordinary sense of the word and moreover the entire problem of carriers and its method of infection is still a mooted one. One fact is certain—that infection amongst physicians and nurses treating poliomyelitic patients, or in patients lying alongside poliomyelitic cases is indeed a medical curiosity. It is my opinion that patients with poliomyelitis should be treated in a general hospital. This would tend in a measure to allay the panicky state of mind that occurs during an epidemic. It would relieve the congested wards of the hospitals for contagious diseases to which these patients are sent, and would afford considerable opportunity for study of this problem by a larger group of physicians and might eventually lead to discoveries of methods of treatment yet unknown. It would prove of benefit to the patient, to the physicians and to the lay public.

Serum therapy has been the chief source of difference amongst physicians. It is a known fact that a vast majority of patients recovering from poliomyelitis contain in their blood an immunizing substance which

neutralizes the poliomyelitic virus. Moreover, it has been found that this substance is present in the blood of most adults who may not have had poliomyelitis.<sup>6</sup> Animal experimentation<sup>7</sup> has proven the value of this serum. There is an increasing number of published reports on the value of immune serum in the treatment of poliomyelitis.<sup>8</sup> All, however, agree that it is most effective when administered before the onset of paralysis. Furthermore, the earlier the serum is administered the better the results. Some agree that there is great value in serum therapy even after some parestheses or paralyzes have occurred.<sup>9</sup> The author's experience has proven to him the value of immune serum when administered early in the disease and in the proper manner. Serum should be administered intravenously or intramuscularly, and never intraspinally. The latter method cannot possibly reach the virus and causes marked aseptic meningitis,<sup>1</sup> which adds to the edema and therefore, to the compression of the delicate cord tissue. On the other hand, when given intravenously or intramuscularly, it is bound to reach the virus and neutralize it to some extent. The writer has used blood transfusion<sup>1</sup> in the first 24 hours of the disorder with remarkable benefit, employing a recovered poliomyelitic patient as a donor. Such donors, however, are not always available. Therefore, ordinary donors<sup>10</sup> may be used on the principle that their blood contains immunizing substances, as proven in most adults. Pooled serum from poliomyelitic patients could be used effectively, both intravenously and intramuscularly, 50 cc being given in the vein and 25 cc in the buttock. This may be repeated within 24 hours. Only too often one meets with the argument that once the nerve cell is destroyed, nothing could help it. While this is true no one can tell when and where the paralyzes will stop, and many patients with the spreading, or Landry's, type of paralysis may be saved if serum is administered even after the initial onset of paralysis. As pointed out by competent observers,<sup>11</sup> watching these patients one by one is more convincing than any statistical report could possibly show the value of serum therapy.

Spinal puncture is not done as frequently as formerly, for its value in reducing edema is not very great, and in bulbar poliomyelitis sudden release of spinal fluid may cause changes in the pressure within

the fine capillaries of the medulla, resulting in their rupture and increasing the pathological changes in the medulla; it may be indirectly responsible for the death of the patient.

The edema that is present in the nervous system in this disorder requires skillful management, for it contributes materially to the injury of the nerve cells. Hypertonic solutions of glucose intravenously, 250 c.c. of a 25 per cent solution, will reduce the edema and furnish considerable nourishment to the patient. It is particularly helpful in bulbar poliomyelitis.

Forced spinal fluid drainage, as introduced by Kubic,<sup>12</sup> is based upon experimental, clinical and pathological observations and is a real contribution to the treatment of infections of the nervous system. While the author had no personal experience with this method in poliomyelitis, it certainly should prove of value after the onset of paralyses, and particularly in the encephalitic forms of poliomyelitis.

The bulbar type of poliomyelitis requires special skill in its management. The patient should be put in the prone position upon a hard mattress and the foot of the bed elevated to insure drainage. The accumulation of mucus in the back of the throat should be removed by swabbing, or preferably by suction. It is imperative that these patients receive fluids either by rectum or by hypodermoclysis. Hypertonic glucose, intravenously, serves the double purpose of furnishing nourishment and fluids, as well as reducing edema. According to Smith and Fineberg, nasal gavage should not be begun until the temperature has subsided, and then only in small amounts, to obviate vomiting.

The respirator<sup>13</sup> should be used for patients who show diaphragmatic or intercostal muscle paralysis. It should not be used when respiratory embarrassment is caused by involvement of the medulla.

When one considers the seriousness of poliomyelitis, intramuscular administration of immune serum or parental blood to children is both a sensible and practical prophylactic measure. It would seem reasonable to expect public health authorities to be prepared for future epidemics. This would necessitate the obtaining of sufficient amount of serum from patients who have recovered from poliomyelitis. Moreover, it would be advisable to test the ordinary certified donor's blood for antiviral properties. He should then be properly

certified so that when required he could be called upon to give blood to the poliomyelitic patient. Considering the fact that billions are justly spent for industrial recovery, the sum of money spent on properly securing immune sera and certifying immune donors would indeed be insignificant and trivial, and would save many a life and limb.

### SUMMARY

(1) The onset of poliomyelitis is characterized by headache, vomiting, and mild temperature. The signs are primarily those of meningeal irritation. The value of the tache as a diagnostic sign is emphasized. The various clinical types of poliomyelitis are described.

(2) The administration of serum early in the disease is emphasized.

(3) The advantages of treating these patients in a general hospital are discussed.

(4) The duty of public health authorities to organize for effectively combating epidemics by accumulating immune serum and certifying donors whose blood contain antiviral bodies is discussed.

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## THE TREATMENT OF ERYTHROBLASTOSIS OF THE NEWBORN

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We are not greatly concerned whether erythroblastosis is the correct term in designating the associated hemolytic conditions in the newborn which have been nicely correlated and described by Diamond, Blackfan, and Baty.<sup>1</sup> We are, however, vitally and practically interested in the proper and effective treatment of these cases, about which much has been written which is not only misleading but distinctly incorrect.

Concerning the *etiology* and *pathogenesis* of this group which includes universal edema, icterus gravis, and anemia of the newborn, there has been much discussion and interesting speculation,<sup>1, 2, 3</sup> but until more is definitely known about such primary normal factors governing hemopoiesis, hemolysis, bilirubin formation, and metabolism, it seems idle to theorize concerning the more complex states which constitute the underlying factors in these hyperplastic hemolytic anemias of the newborn (we prefer this term).

We recognize edema of the newborn as the most severe and hopeless of these conditions. In fact, these cases are either dead at birth or succumb shortly after, and, at the present time, there is no effective treatment.

At the other end of the line, speaking from a prognostic viewpoint stands anemia of the newborn. This condition is a very definite entity, a member of this group, and must not be confused with any other anemia in infancy, nutritional or otherwise. Anemia of the newborn can be successfully treated by transfusion and, if necessary, repeated transfusions, plus proper general hygiene and diet. Of late, there are of this condition numerous descriptions.<sup>1, 2</sup> The therapeutic indications, as will be described, are definite and if properly carried out will be rewarded with success.

Icterus gravis is the third member of this group. We see no reason why this term should not be retained. It is descriptive, for it is certainly an icterus and the condition is admittedly grave. Icterus gravis is the member of this group which demands early and specific treatment if effective results are to be expected.

These hyperplastic hemolytic conditions

in the newborn seem to be an abnormal continuation of the fetal medullary and extramedullary hemopoiesis coupled with an abnormal accentuation and prolongation of the physiologic process of hemolysis in the newborn.<sup>3, 4, 5, 6</sup>

The *diagnosis* depends on a rapidly progressive jaundice and anemia, usually with apathy but sometimes with twitching and convulsions. The hemoglobin and number of red blood corpuscles drop rapidly, the bleeding time is prolonged, fragility tests are not constant, hemorrhages may occur, the spleen and liver are enlarged, and there is usually but not always an erythroblastosis and reticulocytosis accompanied by the appearance of immature leukocytes in the peripheral blood.

The minute findings and postmortem diagnosis will not be described, this has been admirably done many times.

If early treatment is essential—and we feel this is of prime importance—the differential diagnosis must separate this pathologic hemolysis from ordinary or marked cases of physiologic icterus. We all have had cases of physiologic icterus which have been deeply jaundiced and have also shown some drowsiness. These have caused us some apprehension but have cleared up without specific treatment. When then, are we dealing with a marked physiologic icterus and when does this hemolytic process become severe enough to be considered pathologic, consequently severe enough to be dangerous and require specific treatment?

The picture of icterus gravis is not always complete with all the signs and symptoms mentioned in chronological order. In fact, we are faced here with another medical condition which requires judgment. Medical or surgical judgment is always based on facts properly correlated with resulting logical conclusions. In this particular instance the typical picture may be more or less complete. Clinically, however, the factor which must be carefully watched is the hemoglobin and, because of the rapidity of the hemolysis in some cases, the hemoglobin must be taken and recorded several times a day as is deemed necessary. No newborn child can have a pathologic

hemolysis with a hemoglobin stationed at the high level of the newborn, even with dehydration; whereas a falling hemoglobin, especially if rapid, requires very prompt treatment. We know this sign is clinically available and feel that it is of the utmost importance.

There are other aids which may at times help in arriving at a diagnosis, such as family history; however, sporadic cases frequently occur. At this time it might not be amiss to discuss briefly the size and condition of the placenta and erythroblastosis in the peripheral circulation.

Concerning the number of erythroblasts present in normal newborns, the figures given by different authorities are at wide variance. Diamond, Blackfan, and Baty<sup>1</sup> say there are 5 to 10 nucleated red blood cells per one hundred white blood cells counted or 1,000 to 2,000 per cubic millimeter. We feel that this figure is inordinately high. Other authors such as Abt and Nagel,<sup>7</sup> Simon,<sup>8</sup> Todd,<sup>9</sup> and Cummer,<sup>10</sup> give no specific figures but say that an occasional erythroblast may be encountered in the blood of normal newborns during the first few days of life. Sanes and Ryerson,<sup>11</sup> in a personal communication on some work as yet unpublished, find that by the end of the third month of pregnancy the erythroblasts have entirely disappeared from placental sections. To quote them, "In the examined fragments of placenta replacement of nucleated by non-nucleated forms took place almost entirely during the second and third months of pregnancy, so that after the third month a normoblast could be found only by inspecting thousands of cells, a proportion unaltered throughout the remaining months of pregnancy. Smears from the umbilical cords of newborns revealed the same almost complete absence of normoblasts."

Diamond, Blackfan, and Baty<sup>1</sup> call attention to the fact that in many of these cases of icterus gravis neonatorum the placenta is noted to be enlarged and edematous. This condition, however, is not constant and it would seem that, for early diagnosis, greater importance should be attached to the histologic section of the placenta, whereas if erythroblasts are found, the infant should be closely watched for clinical evidence of this group of anemias.

To continue with differential diagnosis, syphilis is a disease which can simulate erythroblastosis in every minute detail.<sup>5</sup>

It might not be easy to make a rapid differential diagnosis. We all know the variabilities of the complement fixation tests in mothers and babies at the newborn period. The emergency treatment, however, would be the same. It must not be inferred from this statement that "erythroblastosis" is linked up with syphilis. It most emphatically is not.

Congenital deformities must be ruled out, particularly congenital deformities of the bile ducts with obstruction and resulting hyperbilirubinemia. Theoretically the Van den Bergh test should differentiate between obstructive jaundice and hemolytic jaundice, but unfortunately a hemolytic jaundice may cause bile thrombi which secondarily result in blockage causing a direct Van den Bergh reaction thus confusing the issue. Again the hemoglobin estimation is of value in early cases; for a deepening jaundice and a stationary hemoglobin cannot be hemolytic but must be obstructive. Congenital deformities with biliary obstruction are now successfully surgically treated in a goodly number of cases, but these do not require the very rapid and early interference the hemolytic cases demand.

To say as some have, that this hyperplastic-hemolytic group is caused by sepsis is a statement which is borne out neither by clinical nor postmortem experience. As a matter of fact, a general sepsis takes it definitely out of this group. If signs and symptoms are similar the emergent treatment should be the same and the definite proof of sepsis can be established at a later date.

Hemorrhagic disease of the newborn is a condition of unknown pathogenesis. It is not associated with this hyperplastic-hemolytic group for it shows neither abnormal hemopoiesis nor abnormal hemolysis. It is characterized by a prolonged bleeding time and hemorrhages from any part of the skin, mucous membranes, or viscera (lungs, brain, adrenals, etc.). The hemorrhage can be severe, exanguination occurring rapidly. This is the place "par excellence" for intravenous transfusion. We have never had a case in which one transfusion properly performed failed to replace the lost blood and stop the bleeding. This is in direct contrast to the hemolytic group which demands multiple transfusions. We have seen a case of icterus gravis in which the hemolysis was so severe and the resulting pallor under the

icterus so marked that the case was at first taken for a severe concealed hemorrhage. The child was rigid and the enlarged spleen was mistaken for a hematoma of the adrenal. Thus, occasionally these conditions can cause temporary confusion, the diagnosis, however, can easily be cleared up after a more minute study of the case, the emergent treatment being the same.

The real reason for writing this paper is to bring to the attention of the medical profession the treatment of icterus gravis and anemur of the newborn by properly given repeated transfusions. We have been using this method of treatment for the last eight years with uniformly good results in a class of cases in which the prognosis is otherwise poor (icterus gravis).

Diamond, Blackfan, and Baty<sup>1</sup> in their excellent article mentioned briefly the treatment by repeated transfusions and gave a report of several cases in which the amount of blood given was not mentioned. We believe this to be important. Since their publication, there have been several articles written on the subject<sup>2-12</sup> which show distinctly that the treatment by repeated transfusions apparently was not sufficiently emphasized, or at least the authors do not appreciate the value of this treatment.

Many authors speak of subcutaneous injections of blood.<sup>14</sup> Others speak of one possibly two transfusions<sup>12</sup> (Sanford) and maybe in insufficient quantity. These are usually accompanied by complete postmortem reports. Others make the statement that they have had no success with transfusions.<sup>2-12</sup> (Gruel et al.) In a Round Table Conference on Disorders of Blood and Hemopoietic System led by Dr. Thomas B. Cooley for whom we have the greatest respect, he cited a case of erythroblastosis in the newborn in which the child received seventeen transfusions and still hemolyzed, requiring a splenectomy. The child recovered but died of complications following operation. This certainly is an exceptional case which takes it out of the typical run of cases we are describing. We feel that these cases have a definite period which when safely passed, do not tend to hemolyze. This is similar to a like-period in hemorrhagic disease of the newborn past which these cases do not bleed. In our experience in neither of these conditions is the abnormal tendency carried through into later life. Thus we believe

that no relationship exists between these conditions of the neonatal period and the blood dyscrasias of later childhood such as Cooley's anemia, Jakisch's disease, or familial hemolytic icterus. In Cooley's case, we feel we would have become discouraged after the fifth transfusion and turned the case over to the surgeon, but Dr. Cooley goes on to remark "in another case I should urge immediate splenectomy." This statement seems very radical and unwarranted for three reasons: first, the case from which he draws his conclusions certainly is an exceptional one and not at all according to the usual run of erythroblastosis in the newborn, second, early splenectomy in these cases is unnecessary and would most certainly result in a high mortality, third, properly conducted repeated transfusions have in our hands shown it to be a very successful method of handling these hyperplastic hemolytic conditions.

The method we use in carrying out the treatment is as soon as a case is suspected, we take a hemoglobin, blood smear, and cross agglutinate. Blood testing is advisable in order to minimize unnecessary additional hemolysis.

As soon as the diagnosis is made and the hemoglobin drops, 100 to 125 c.c. of compatible blood is given intravenously by cutting down on the internal saphenous vein at the internal malleolus or half way up the leg parallel and just to the medial side of the tibial border.<sup>15</sup> The transfusion is repeated daily or every other day as indicated, depending on the general condition of the patient and the hemoglobin estimation. If because of insufficient fluid intake, toxemia or dehydration, it seems advisable, a slow intravenous drip can be instituted and if the cannula remains patent, it is often possible to retransfuse without opening another vein. Transfusion replaces the hemolyzed blood with a functionally good blood and stops hemorrhage. The hemoglobin which often drops as low as 20 to 30 per cent should be kept up to 70 or 80 per cent. There must be no discouragement felt if four or five transfusions are necessary, most cases require at least three and usually not more than four.

The rest of the treatment is general hygiene with directions as to food, fluid in take enterally or if necessary parenterally.

To illustrate, we wish to call attention to several cases, not in the usual detailed

manner of review or in tabulated form but from a general viewpoint, since all of our cases have been similar in practically every respect, both in clinical and laboratory findings. Several cases occurring in one family will show this as well as furnishing a striking control series.

This mother has been delivered of six children and has had no miscarriages. The first and third pregnancies resulted in babies who died within a few days of birth. From the description obtained from the mother and from hospital records, these children undoubtedly succumbed to severe cases of icterus gravis neonatorum. Nothing specific was done for these babies as far as treatment was concerned. The second child was a normal infant and to-day is fifteen years old, well and healthy. The fourth child is now eight years old and perfectly normal. She was a full-term female infant weighing 6 lb. 14 oz. From birth the child was markedly jaundiced and appeared drowsy and listless. It vomited part of practically every feeding for the first week. On the eighth day, the child had some bleeding from the mouth and the stools were streaked with blood. It was immediately transfused and given 100 c.c. of whole blood. On the tenth day, petechial hemorrhages appeared, first on the back in the lumbar region and then over various other parts of the body. At this time generalized twitching and jactitations occurred requiring the use of sedatives. On the eleventh day the hemoglobin was 45 per cent (Sahli) and there was one normoblast for every 200 leukocytes counted. A direct blood transfusion of 75 c.c. was given on the twelfth day. Subcutaneous injections of 20 c.c. each were given on the fourteenth, seventeenth, and nineteenth days, and 90 c.c. was given intravenously on the twenty-first day. From this date the child began to improve and was discharged on the thirty-fifth day in good condition.

The fifth child as well as the first and third were not seen by the authors and died on the second day. The autopsy protocol describes the fifth child as being intensely jaundiced, both skin and internal organs. The brain, serous membranes, lungs, mesentery, and skin showed multiple hemorrhages. Icterus gravis neonatorum was assigned as the cause of death.

The sixth child, now five years old, was born at full term, weighing 8 lb. 3 oz., and was deeply jaundiced. From the beginning it regurgitated a great part of its feedings. The bleeding time was markedly prolonged as evidenced by the fact that puncture wounds made for obtaining blood for hemoglobin and blood grouping determinations bled for many hours. The hemoglobin was dropping steadily, going hand in hand with the deepening jaundice. The child was drowsy, listless, in a word toxic. On the second day a direct blood transfusion of 100 c.c. of whole blood was given. The hemoglobin rose and the general condition of the child be-

came improved for three or four days. Then again the toxicity appeared and the hemoglobin began to decline, going rapidly to below 20 per cent (Sahli). Symptoms of respiratory difficulty appeared. On the fourth and seventh day the transfusions were repeated and 120 c.c. given. The child now improved rapidly and was discharged in good condition on the fourteenth day.

Since these cases, we have had the opportunity of treating a series of others occurring sporadically and in families, and the practice has been to transfuse then early and repeatedly. When this has been carried out, the children have improved much more rapidly and have not shown the marked degree of toxicity found in the early cases where transfusions were withheld until the seventh day or later.

In watching these infants we wish to call attention to the fact that the most important guide in treating them is repeated hemoglobin determinations. The deep jaundice masks the degree of anemia and is misleading as to the true state of the infant. Note that in the first and third children, although the hemoglobin was known to be less than 50 per cent, nothing was done. In the last baby the hemoglobin dropped so rapidly that a remarkably low level of 20 per cent (Sahli) was reached before the degree of anemia was realized.

We feel that we cannot emphasize too forcibly the value of early and frequent transfusions for cases in this group of hyperplastic-hemolytic anemias.

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## ANEMIA OF THE NEWBORN

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Primary anemia of the newborn can be classified as a definite clinical entity. In practically all the cases reported the following features have been noted. The parents have been in good health, the labor has been normal and spontaneous, and no signs of infection, birth injury, or hemorrhage could be found. The infants appeared vigorous when born, nursed well, and had a normal temperature and except for the development of extreme pallor seemed normal in every other way. Most of the cases recovered both with and without treatment, and no residual effects have been noted in those cases followed over a period of years.

We wish to report a typical case of anemia of the newborn.

### CASE REPORT

E. D., born April 9, 1932, a normal male, full-term normal delivery, weighing 7 lb. The mother was well and in good health before and during the pregnancy. The father was also in good health. There is one other child three years of age living and well who has been well from birth to the present time.

E. D. was seen on the first day of life because the nurse observed that he did not cry as lustily as most infants. At that time the physical examination was negative. For the next nine days he seemed fairly active, nursed well on the breast, and had gained back his birth weight.

On April 19, at ten days of age, the nurse reported that during the past twenty-four hours the infant had become very pale. Physical examination showed an infant with extreme pallor, heart and lungs normal, abdomen soft, no masses felt, liver and spleen not felt, there were no cerebral symptoms nor external bleeding. Temperature 99° F., blood examinations showed hemoglobin, 24 per cent, erythrocytes, 1,390,000, white count, 15,600, polymorphonuclear cells, 58 per cent, lymphocytes, 28 per cent, monocytes, 5 per cent, eosinophiles, 9 per cent, coagulation time, 2 minutes, bleeding time, 4 minutes. He was transfused with 100 c.c. of his father's blood.

On April 21, blood examination showed

hemoglobin, 42 per cent, erythrocytes, 2,600,000, white count 15,600. He was transfused again with 100 c.c. of blood from the father. At this time a laboratory examination of the stool was negative for blood.

On April 25, blood examination, hemoglobin, 59 per cent, erythrocytes, 2,700,000, white count, 12,000. Transfusion of 100 c.c. of blood.

On May 1 the nurse reports that the infant at times seems quite pale. Blood examination hemoglobin, 45 per cent, erythrocytes, 2,900,000, white count, 10,900. He was given a fourth transfusion of 100 c.c. of blood.

On May 14, at five weeks of age, he was discharged from the hospital weighing 8¼ lb. Blood examination hemoglobin, 44 per cent, erythrocytes, 2,600,000, white count, 6,600.

His blood picture after discharge gradually but slowly improved and he gained normally in weight and appeared well. A blood examination on July 28, at 3 months of age showed hemoglobin, 65 per cent, erythrocytes, 3,100,000, white count, 8,900.

March 22, 1934, when nearly two years of age, he had an upper respiratory infection with double otitis media. His blood examination at this time was hemoglobin, 75 per cent, erythrocytes, 4,100,000.

Ecklin<sup>1</sup> reported the first case in 1919. Pasachoff and Wilson<sup>2</sup> in reviewing the literature in 1931 were able to find twenty-eight case reports. Since 1931 we have been able to find eight new case reports making a total of thirty-six cases reported in fifteen years. Sustrunk's<sup>3</sup> case can be classified as doubtful as at autopsy it showed hemorrhages of the renal pelvis and bladder, valvular hematomas, and some icterus. Abt<sup>4</sup> excludes 3 cases on etiological grounds and one as doubtful as prematurity might have accounted for the anemia. He feels that anemia of the newborn is the most appropriate title for this disease until the exact etiology of the condition has been proved. He objects to the term idiopathic, primary, or congenital anemia. The congenital nature of the disease has not been proved, for these

anemias are of the secondary type. He found phagocytic mononuclear leukocytes in the circulating blood of his case, but feels that this has no bearing on the etiology of the case. Bonar<sup>5</sup> reported 2 cases born of the same mother but a different father and suggested that maternal transmission might have something to do with the etiology. Segar<sup>6</sup> reported 3 cases in one family. Except for these two reports there is no reason to believe that the anemia is due to any transmissible parental defect. Pasachoff<sup>2</sup> brought out the similarity of the blood in these cases of anemia to that of an acute posthemorrhagic anemia. Ehrmann<sup>7</sup> found increased fragility of the erythrocytes, but this has not been confirmed by other investigators. He reports a case five days old with hemoglobin, 28 per cent, erythrocytes, 1,228,000, white count, 20,500, seven nucleated reds per 200 white cells, coagulation time, 4 minutes, bleeding time, 3½ minutes, and increased fragility of the red cells. He suggests that the increased fragility of the red cells indicates an inherent weakness in the cells themselves. Daldorf<sup>8</sup> feels that these cases are the result of nutritional deficiencies, and Parsons<sup>9</sup> also states that congenital anemia is a true nutritional anemia due to deficiency in the maternal diet. This deficiency in the maternal diet may or may not show itself as a nutritional anemia in the mother. He produced milk anemia in rats. Dried brewer's yeast was then added to the milk with a rapid complete cure of the anemia. Litters from these rats, however, were anemic, the hemoglobin ranging from 12 to 25 per cent. Pasachoff and Wilson<sup>2</sup> reported a case on the fifth day of life with hemoglobin 8 per cent, erythrocytes, 390,000, coagulation time, 5½ minutes, bleeding time, 22 minutes, who died on the fifth day before a transfusion could be given. At post-mortem the predominant feature was a myeloid reaction in the spleen and bone marrow and to a less extent in the liver, and only a slight response on the part of the erythrocytogenic system. There were extremely few normoblasts and no megaloblasts in the circulating blood. Gelston and Sappington<sup>10</sup> reported a case in April, 1930. The blood count on the seventh day showed, hemoglobin, 42 per cent, erythrocytes, 2,300,000, white count, 12,400. On the eleventh day blood examination showed

hemoglobin, 23 per cent, erythrocytes, 740,000, white count, 20,000. The baby received three transfusions of about c.c. each and liver extract daily. At five months of age the blood examination showed: hemoglobin, 78 per cent; erythrocytes, 4,100,000. Except for the fact that the mother had a small abscess ten days before term no other cause could be found for the anemia. They suggested that congenital or primary anemia of the newborn apparently represents some cause acting during the prenatal period which markedly inhibited the production of blood corpuscles and the normal amount of hemoglobin.

We are of the opinion that this is a disease entity distinctive of the newborn but that some of the cases cited in the literature should not have been included. We have seen severe secondary anemia of the newborn with the same blood picture where the anemia was accompanied by pyuria or a focus of infection elsewhere. Such cases, however, are accompanied by fever, and careful examination excludes them from this category. Of infants with a severe anemia have hemorrhages or hemorrhagic disease of the newborn as an etiologic factor. We must be careful to exclude syphilis and hemolytic jaundice. One should also take a careful history on the mother concerning severe acute or chronic illnesses.

The two outstanding features of anemia of the newborn are: the lack of etiologic factors and the tendency to get well even though unassisted in many instances. However, we cannot imagine anyone treating these cases without transfusions. In our case and in many other cases in the literature repeated transfusions seemed to bring little aid in the recovery, but the progress of the anemia without the transfusions must have been different.

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## Symposium on Cancer

### THE RELATION OF THE GENERAL PRACTITIONER TO THE CANCER PROBLEM

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It has been well said that the fate of the cancer patient is in the hands of the first physician whom he consults.

The New York State Committee of the American Society for the Control of Cancer has been attacking the cancer problem from one angle, *i.e.*, the angle of public education, for the last seven years. The chief item of our program is to get the cancer patient, or the suspected cancer patient, into the doctor's office at the earliest practicable moment.

In round numbers, there are 150,000 deaths in the State of New York every year. Twenty-five per cent of these deaths are due to heart disease and 10 per cent are due to cancer. Consequently, whenever a patient with subacute or chronic symptoms consults a physician, it seems safe to say that there are thirty-five chances in a hundred that the patient is developing, or has developed, cardiovascular-renal disease or cancer.

The examiner must proceed with the idea of excluding these two common disease groups before he decides that the symptoms of which the patient complains are due to some other abnormality. In other words, he must look upon the patient with an indefinite symptomatology of a subacute or chronic nature in a way similar to that in which the French look upon the individual accused of crime. In French practice, the accused has to prove that he is innocent, in Anglo-Saxon practice, the government has to prove that the accused is guilty. The two problems are entirely different. So, the examining physician must satisfy himself, when he is consulted by an individual who complains of indefinite symptoms, accompanied by a bloody discharge, persistent indigestion, some chronic sore that does not heal readily, particularly about the mouth, or tumor, that he has not to deal with one of the group of diseases above mentioned. We think that the physician who tells the pa-

tient with a breast tumor to wait until the tumor begins to grow, or until it begins to bleed, has not given that patient proper consideration or proper advice. We think the physician who prescribes for a female patient in the age period of the menopause, who has irregular bleeding, without making a pelvic examination is not giving that patient proper consideration. We think that the physician who prescribes for a patient 45 years of age or more, who has complained of indigestion for a considerable period, without urging him to have a gastro intestinal x-ray study, is not giving that patient proper advice.

We are continually receiving letters from people in various parts of the state asking our opinion concerning concrete cases of illness. It might be well to read one such letter.

'My sister, a young woman of 29 years, suddenly developed a lump in her left breast about one year after her little girl was born. She had it examined and was told it was a tumor and should be removed. She went to a doctor who claimed to be able to dissolve it. After wasting six weeks with him it became larger and more painful and he stated it must be operated at once. She went to a specialist who removed her entire left breast because she had a malignant tumor.

She seemed to feel better for about five weeks when she noticed a slight lump on her left shoulder. The doctor immediately removed same and stated it was a small tumor and perfectly harmless. It is now three months since the first operation and she has been told to get x-ray treatments on the left side of her body where she has been operated on. It weakened her heart, and after seeing another doctor it seemed her thyroid gland had become enlarged due to her extreme nervousness. She has to go for these x-ray treatments every other day for six months and then be under observation for two years.

After spending a considerable amount of money the poor child feels very miserable. She has a very dizzy feeling in her head. Having two children she has more than her hands full for a person in good health. Won't you please tell me what she can do to become well, what doctor she can go to in order to get the right kind of advice."

This letter is an excellent example of the uncertainty surrounding the cancer problem. It indicates the lack of information conveyed to the patient or to her family concerning the progress of a concrete case of illness. It reveals the manner in which many lay people repeat opinions given them by physicians. It also shows the undecision that patients and their families exhibit in the case of serious illness, probably the result of ignorance and alarm.

But aside from the layman's attitude, what is to be said about a physician who will tell a patient that he can "dissolve" a breast tumor? What is to be said about a physician who will advocate x-ray treatments every other day for six months as a method of postoperative treatment for cancer of the breast? What can we say

about a physician who will undertake to give postoperative irradiation with roentgen rays with an equipment suitable for diagnostic procedures? Postoperative roentgen therapy requires an equipment of 200,000 volts capacity.

Let the first sentence in this short discussion be repeated: "The fate of the cancer patient is in the hands of the first physician whom he consults."

We feel that it is incumbent upon the general practitioner to study the natural history of cancer and try to understand it. When difficulties arise in the understanding, as they will, he should be willing to seek advice from those who have studied the subject longer, and consequently may be presumed to be able to transmit the knowledge available.

## THE RELATION OF THE PATHOLOGIST TO THE CANCER PROBLEM

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The relation of the pathologist to the cancer problem is somewhat like that of the navigator aboard ship. The navigator with his nautical instruments plots his course, thus assisting the pilot in guiding his ship. The pathologist with his laboratory equipment is able to make a differential diagnosis of the tumor, thus assisting the clinician to pursue the proper course in the management of his patient.

At this time we are all particularly interested in the early diagnosis of cancer, believing that our hope of greatest accomplishment lies in this factor. The general practitioner or family physician is the one most likely to see the patient first. It has been said that the ultimate fate of the cancer patient is in the hands of the first physician who sees him and if the doctor does not recognize his responsibility, the chances for saving life are greatly decreased.

In the first place, it is essential to differentiate between malignant and benign tumors. This may be difficult and uncertain in the gross, requiring two other essentials: a microscope and familiarity with histopathology. This is the rôle of the pathologist. Bloodgood has said that a good surgeon "feels more comfortable to have a pathologist at his elbow" when in the operating room. In order to obtain material for examination, a biopsy is performed.

If an immediate report is desired, a section of the tissue is made by the freezing method. It takes five to fifteen minutes to cut, stain and examine the section, and the patient may be kept under a general anesthetic during this time. If a little more time can be spared and the anesthetic is discontinued, the acetone method may be used. This method requires twenty-four hours but the structure detail of the tissue is apt to show more clearly than by the freezing method. This is particularly true of uterine curetings and tissue of very fine texture.

There seems to be some misunderstanding about biopsy as there are some clinicians who persist in adhering to the belief that it is a dangerous procedure. At the Institute for Malignant Diseases in Buffalo, over seven thousand biopsies have been done and it is reported that no case has been observed in which any deleterious effect was noted. Of course, the proper technic must be followed. Simpson states that they have cut into tumors on their mice, cut out parts, and studied them. Examination of these mice after death shows no increase in metastasis or increase in the growth of the tumor. Bloodgood has often stated that every breast tumor and every bone tumor should be biopsied and clearly diagnosed before any line of therapeutic procedure is considered. The experience of Ewing, Cutler, Geschickter,

and others, all favor the use of biopsies. In our own experience at the Leonard Hospital we have observed no evidences of metastasis or expansion in growth following biopsy.

In cases of benign tumors complete extirpation usually cures the case unless there is some other complication. In these benign tumors, radical operation is never indicated and should not be done. In the cases of malignant tumors, there are several factors to consider before deciding on procedure. First the tumor is to be classified as to structure, such as carcinoma, sarcoma, and the like. Then it must be graded as to its degree of malignancy. This depends upon the cell structure of the tumor and its radiosensitivity. Not all tumors lend themselves readily to this type of differential diagnosis but there are few in which it is not of valuable service. The largest number of carcinomata fall in the intermediate classes of moderate, average malignancy and radiosensitivity, probably about 75 per cent of cervical and breast cancers fall in these classes, and in the remaining 25 per cent the finest diagnostic distinctions become paramount in the prognosis and choice of treatment. In cancer of the body of the uterus, the variations in malignancy become very much greater, and differential diagnosis is almost indispensable. The same holds true in tumors of bones, nerve trunks, secreting glands, bladder, larynx, endocrine glands, and so forth.

These facts about the tumor are included in the report to the clinician, who being trained to interpret them, is able to decide on his subsequent procedure. In addition to the histological report on the tissue, there are other laboratory procedures which have an important bearing on the diagnosis. Radiograms properly interpreted are very important. Wassermann tests should be made in all cases. In bone

tumors, the presence of Bence Jones bodies in the urine is considered almost a positive finding in cases of multiple myeloma. In cases of osteitis fibrosa cystica, the blood chemistry findings, particularly those involving the calcium metabolism are essential to make the correct diagnosis. In tumors of embryonal origin—teratomas, seminomas, chorionomas, and the like—the diagnosis is greatly aided by the reaction of the Aschheim Zondek test. Likewise the prognosis may be determined after treatment in these cases by the variation in this reaction. Examination of the stomach contents for blood bacteria and acidity aids in the diagnosis of cancer of the stomach, likewise examination of the stools for occult blood in cancer of the intestinal tract. These findings along with radiograms are invaluable in establishing the diagnosis in these cases.

A word should be said about biopsies in tumors of the cervix, rectum and prostate. In the cervix and rectum, a biopsy may be made safely with a canterly or radio knife. In the prostate, it may be made by the perineal stab method, and the shreds of tissue thus obtained spread directly on a glass slide and stained and examined. Dr. Ferguson told the author the other day that at the Memorial Hospital in New York, their biopsy diagnoses were found to be correct at subsequent examination in over 90 per cent of their prostate cases. It is obviously helpful to the clinician to know with what he is dealing before he begins his therapeutic procedure.

One cannot emphasize too strongly the importance of obtaining a correct diagnosis of the tumor early. Upon this rests the therapeutic procedure, extirpation, radical dissection, and amount and kind of radiation. Ewing says that a correct laboratory diagnosis is the most essential factor in the management of the cancer problem.

## THE RELATION OF SURGERY TO THE CANCER PROBLEM

PETER L. HARVIL, M.D., F.A.C.S.

Troy

Thousands of cases of cancer are cured each year through surgery, and thousands more *could* be cured if physicians and laymen were quicker to recognize the disease in its early stages and more optimistic in their attitude toward surgical treatment. Statistics show that in the United States

and Canada there is an approximate annual death of 150,000 cancer cases, and that of this number at least a third might be saved if the disease were recognized early enough and properly treated.

I would refer pessimists in the medical profession to the statistics of a great

organization like the Mayo Clinic. Here thousands of patients are expertly examined yearly with the result that a large number of cancer cases in early stages are picked up, often where least expected. The relatively high percentage of cures effected by the clinic by surgical treatment, especially in varieties which are locally rarely seen at a sufficiently early stage to operate with any expectancy of cure, should have a good psychological effect on the pessimist.

While radical surgery is the best treatment in the majority of cancer cases, there is a group of cases which at this time are universally considered incurable. In this class are cancer of the esophagus, of the cardiac end of the stomach, of the pancreas, of the gallbladder, and of the lung. Cancer of the cervix is generally treated with radium, although if the Schiller test proves successful for early diagnosis, we may return to surgery in this important field. Buccal as well as urological cancer is usually treated with a combination of radium and surgery, and skin cancer study shows about equally successful results from both methods. When surgery is employed in this last group of cases, it is well to remember two things: first, to be sufficiently radical, disregarding the cosmetic result; secondly, to keep well away from the zone of growth when using local anesthesia. To illustrate the first point, the author remembers a case he had a number of years ago in which he removed an epithelioma of the face. He was very proud of the fact that he kept the scar within a wrinkle so that it was practically invisible. Two months later a recurrence humbled his pride. As to the second point, he once had a recurrence along a needle puncture following an operation of a large epithelioma of the forehead.

We have now mentioned the group of cases in which radium or x-ray is used alone or in combination with surgery, and the class of cases which are, up to date, considered incurable. We now come to a third class, those cases which might have been curable had they been treated early enough, but which have become inoperable by the time they come to the attention of a surgeon. A case is generally considered inoperable where the growth has metastasized to some other organ. The author believes that almost every case of cancer should have some form of treatment, if not

with the idea of cure, at least with the thought of making the patient more comfortable. Nasty sloughing masses can often be converted into clean granulating wounds by free use of the cautery. Deep x-ray and radium often help locally as well as generally in controlling pain and bleeding. At one of the clinics resections of the stomach were done where there were metastases to the liver. The theory is that the removal of the primary growth slows up the process and at the same time relieves the local stomach symptoms. Treatment of so-called inoperable cases will increase operative deaths—but what of it! Every once in a while we will be able to effect a cure at a time when we least expect it.

A proper sequence would now bring us to a discussion of the surgical treatment of curable cases, but unfortunately the author knows very much more about cases which have been brought to the surgeon too late to be cured. It is this very fact which the author considers of most interest to the local physician. In the majority of these cases the individual has not sought medical attention until the condition was beyond the favorable stage for cure. A careful yearly examination would probably have meant reaching the cases in time.

In reviewing a rather incomplete list of malignant cases which have been under the author's care from the beginning of 1923 through 1932, he finds that he has dealt with about 108 cases, three-fourths of which have occurred within the last four years, and 20 in the last year. Certain facts of these cases are very striking.

Of some 25 breast cases, only one was doubtful enough to require a biopsy to make a diagnosis. In 90 per cent of the cases there were palpable axillary glands. In this group, 2 patients have lived for five years and one for nine—all 3 being elderly women. Most of the cases have been seen in the last four years and are therefore not qualified for discussion. Two distressing cases were in graduate nurses. One presented herself for operation with an absolutely inoperable local tumor and spinal metastases. The other had been advised to have her breast removed a year before she came for operation. By disregarding all prescribed skin incisions and making an adequate excision with no thought as to the closure, the author has reduced the local recurrence to almost nil. Recently we have

been using the actual cautery, employing the technic of Dr. Scott of Temple, Texas, with the hope of preventing distant metastases. It is too soon to say whether or not this will improve results. We have used very little x-ray in these cases although the immediate results are often very striking. According to Harrington of the Mayo Clinic, x-ray is of doubtful value in cases of high malignancy and of no value in those of low. The author would like to emphasize here the need for radical surgery in breast cases because recently there has been a tendency, particularly in low grade malignancy, to do conservative, incomplete, rather than the time-proven radical operations. Statistics prove that the highest percentages of cures are in that class of cases where there is no nodal involvement and where a primary radical resection is carried out.

In 15 cases of cancer of the lower bowel, the author saw the patients for the first time—with two exceptions—when they were suffering from acute intestinal obstructions which necessitated immediate intestinal decompressions, often blind cecostomies. Resection was later attempted successfully in 8 of these cases. Of this number only 2 are now alive and they have not yet passed the five-year period. In the other 6 cases immediate results were satisfactory, and if they could have been operated earlier, there is a fair chance that the patients would have survived the five-year period. In the remainder of the cases no attempt at resection was made as they were hopelessly inoperable.

Of 10 cases of cancer of the stomach, only 2 were operable. One of these, a leather-bottle stomach with numerous large glands in the gastrohepatic omentum, was practically resected in toto. Although this patient is still alive at the end of two years, she is obviously suffering from further trouble.

There were 15 cases of malignancy of the uterus, including 2 chorio-epitheliomata which the author has lost track of. There were 3 cases of carcinoma of the fundus and the remaining 10 were carcinoma of the cervix. Although the first 5 cases mentioned were operated on by complete hysterectomies, only one carcinoma of the cervix was operated on, that of a young woman of 38, para two, who was referred to the author for cesarian section, the reason being a dystocia due to a rigid cervix

caused by a squamous-cell carcinoma. The author delivered a living child by cesarian section, at the same time performing a pan-hysterectomy. The woman shows no sign of recurrence at the end of three and a half years. The other 9 cases were referred to Dr. Carey for radium treatment.

The rest of the author's malignant cases constitute a varied group. Seventeen were malignancies involving the genito-urinary tract. Of these, 2 involved the kidney, 6 the bladder, 8 the prostate, and one the testicle. One prostate and one bladder case lived for five years or longer. Two other cases of carcinoma of the prostate and one of the bladder, and the case of sarcoma of the testicle are still alive but have not passed the five-year period. The 37 remaining cases are scattered, only 4 of them being epitheliomata, a small proportion when considered in the light of the numbers which were formerly treated by surgery.

Of the prescribed five-year cures there are: breasts: one ten years, 2 five years; one prostate, seven years; one cancer of the fundus, nine years; one malignant papiloma of the bladder, nine years; one so-called cancer of the appendix, five years (the author has had three of these cases, all of a very low-grade malignancy). Furthermore since 75 per cent of the considered cases have occurred within the last four years, there are a good number that the author hopes will join the five-year group.

As time goes on, we see more and more cases of malignancy, but the discouraging fact is that their operability does not seem to be increasing. This means that our attempts at cancer education of the general public has been inadequate locally and that our general practitioners are not referring cases early enough for successful surgery. The answer would seem to be an insistence by all family physicians on at least a yearly checkup, particularly of patients approaching the cancer age and an insistence that every suspicious symptom be thoroughly investigated.

We should all talk a little more about the striking cures of which we know and less of the dismal failures. Let us establish in the lay mind a consciousness that cancer is curable. With hope in their minds instead of terror, patients will cease to delay until too late to present themselves for diagnosis and treatment.

## THE RELATION OF PATHOLOGY TO SURGERY IN THE CANCER PROBLEM

RUSSELL S. FERGUSON, M.D.

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There are two phases of the relation of pathology to surgery in the cancer problem. The first is general and related to the matter of progress in diagnosis and treatment along broad lines. The other is individual and concerns the practicing surgeon and his patients.

One has only to enumerate a few of the achievements of the past three decades to secure an insight into the important influence of pathology on cancer surgery. The removal of the endothelial myeloma from the large group of bone tumors, regarded exclusively by the surgeon as problems for amputation, was due first, to the empiric observation that the tumor yielded to treatment by irradiation; second, to the classical study of Ewing on the structure of the tumor; and, third, to the application of these two findings to the matter of radiologic diagnosis and therapy. No one now regards endothelial myeloma of bone as a surgical problem.

Teratoid tumors of the testis and ovary are susceptible to diagnosis without surgical biopsy or exploration. Careful study of the pathology of these tumors and of the affects of irradiation on the tissue have definitely proved that the only possible means of control lies in irradiation and not in surgery. The mass of evidence that has accumulated in the past twenty years with regard to the effect of x-ray and radium on cancer of the cervix proves the superior results to be obtained by these agents. This is entirely due to the careful study of the gross anatomy of the disease, its natural pathogenesis, and the effects of irradiation on the tissue in the laboratory. The Wertheim operation is definitely discarded by foremost authorities. Present-day problems yield with somewhat greater ease than formerly because of a broader knowledge of the nature of radiosensitivity and radio-resistance of different types of cells.

Extrinsic tumors of the larynx, the author feels sure, will soon become another lost possession of the surgeon due to the fact that the structural features of the tumor suggested to Coutard that the tumor was sufficiently radiosensitive to yield to adequate irradiation. His technic of di-

vided doses of x-ray over a long period of time is now being employed with excellent results in all large cancer centers. The figures at the Memorial Hospital show a salvage of 28 per cent of these cases, as opposed to 5 per cent when surgery was the treatment of choice. The principle underlying this technic is applicable to a wide range of neoplastic disease.

The intensive study of carcinoma of the bladder now being conducted by the American Urological Association through the medium of its Bladder Tumor Registry is a study, pure and simple, of the relation of the pathology and natural history of this disease to the results of surgical and irradiation treatment. The weight of evidence of the material now at hand already tends to throw light on the chaotic state in which the urologist finds himself in the matter of selection of treatment. It is evident that conservative surgery plus the implantation of gold seeds of radon in adequate doses does achieve, in the hands of the average urologic surgeon, better results with less risk than may be obtained by extensive resections or cystectomy.

The dearth of real knowledge of the natural history of neoplastic disease among surgeons is rapidly becoming a thing of the past. This is due in one sense to the appreciation of the experienced surgeon that his results in cancer surgery are not what might have been expected if the conception of radicalism in the removal of cancerous tissues really fits the gross anatomy and cellular pathology of the disease. Another influence has been the wide dissemination of knowledge through the growth of postgraduate schools of surgical pathology, such as Bloodgood's at Baltimore, and of the increasingly high standards of pathology as practiced by the pathologist in the small hospital. Surgeons of experience have taken a renewed interest in the pathological laboratory and seek consultation with the pathologist both with regard to their plan of treatment and to the result obtained. In the heyday of radical surgery few surgeons could be found who could accurately define the chronology of growth in a given tumor and the methods by which the growth might ex-



tend or metastasize. Many patients were operated upon for the removal of a primary tumor when widespread metastases existed.

The author believes that the results of treatment in neoplastic disease will improve in direct relation to the acquisition of a

working knowledge of surgical pathology by surgeons in general. Each individual surgeon will improve his own work by maintaining a file of sections on his own tumor cases and by conference and study of these sections with the hospital pathologist as the cases come to hand.

## THE DETERMINATION OF RADIOSENSITIVITY

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Many years ago it was customary for microscopists who examined fresh stained or unstained, bits of tumor tissue, to venture not only a diagnosis but also an opinion as to the degree of malignancy of a given tumor. Since the advent of radiotherapy and radical operative procedures such opinions have become of great value and at times essential. The subject received considerable study by Broders who has attempted to classify squamous cell carcinoma of the skin and mucosa. Briefly stated, Broders classifies such tumors into four grades, in which Grade I is the slowly growing, pearl-forming type of tumor, and Grade IV, the rapidly growing, infiltrating, nonpearl forming neoplasm, bearing but slight resemblance to the epithelium from which it arises. Similarly, adenocarcinoma has been so classified.

It is believed by some pathologists and surgeons that this grouping of tumors tends to make prognosis more precise. Tumor cells usually resemble those of normal adult tissues when they are spoken of as highly differentiated and are slowly growing, or the tumor cells become anaplastic and revert to the embryonic type of cell when they are spoken of as being poorly differentiated and are usually highly malignant. Between these two extremes lie many intermediate forms, and it is these poorly defined tumors which reduce the value of the method of grading.

One of the important results of the minute study of tumor morphology has been to indicate those tumors which are sensitive to x ray and radium, and those which are not sensitive to radiation. By the term sensitivity, we mean that the tumor tissue will retrogress or disintegrate under the action of x ray or radium, and the surrounding tissues remain normal. Experience teaches that all tissues, normal

and abnormal, may be injured by radiation, but that certain tissues, notably lymphoid tissue and bone marrow are much more sensitive than others. Among the tumors we find that those neoplasms which grow slowly, metastasize late, the cells of which are fully developed, resembling the adult type of cell and tissue, are not sensitive to radiation. Those neoplasms which grow rapidly, metastasize early, and are very cellular, with large nuclei and many mitotic figures, and which lack differentiation so that they bear but little resemblance to the cells from which they arise, are usually sensitive to radiation.

This factor of sensitivity is best exemplified in epidermoid carcinoma of the skin, mucosa, and cervix. The type of cancer corresponding to Grade I in which the prickly cells are well developed, pearl formation present, mitoses few, invasion slight, will be found to be resistant to radiation. Cancer in corresponding locations but without pearls or definite prickly cells but with distinct squamous cell arrangement, prominent nuclei and nuclear figures will be sensitive to radiation. It is by virtue of these details, all too briefly enumerated, that the pathologist is enabled to grade tumors and venture an opinion as to their response to various forms of radiation.

Adenocarcinomata of the breast, the gastro intestinal tract, the uterus, and other organs are insensitive because of their tendency to differentiate into the mature type of tissue. The underlying factor responsible for radiosensitivity is the nucleus of the cell, and in general the larger the nucleus, and the more abundant the chromatic substance, the more readily injured is the nucleus by radiation. Since cell growth and multiplication are dependent on the nucleus and in rapidly growing

tumors the nuclei are obviously hyperactive, they are made more susceptible to the action of radium and x-rays. This explains the great sensitivity of the lymphoid tumors, the leukemic processes, and such bone neoplasms as the Ewing tumor.

The method of grouping tumors, while of limited value in prognosis, becomes a distinct asset in recording those neoplasms likely to respond to radiation and tends to

bring about some degree of uniformity in the art. Thus a patient may be spared a mutilating operation if a preliminary biopsy is performed when practical, and the sensitivity of the tumor estimated. But here again it must be stated that the principles above reviewed are merely general, that there are many exceptions, and that the only accurate means of determining radiosensitivity is to expose the tumor to radiation and note the result.

## THE RELATION OF RADIUM TO THE CANCER PROBLEM

H. W. CAREY, M.D., F.A.C.P.

*Troy*

To-day, as a result of a 30-year study of the action of x-ray and radium upon tissue, we are able to measure the dose of radiation with a considerable degree of accuracy.

In this paper, the term cancer shall include all types of malignant growths, and the term x-ray is used to mean the so-called deep x-ray from machines capable of generating 200,000 volts or more. These machines will deliver penetrating or gamma rays in sufficient amount to destroy malignant tissue anywhere in the body. The ordinary photographic x-ray machine will not deliver gamma rays in sufficient amount except for superficial lesions.

By radium is meant not only the salt of the element itself but also the gas or emanation from radium in solution. This is named "radon" and is used in the form of minute hollow tubes of gold or platinum in which the gas is sealed. Gold and platinum is used to screen or shut out the short burning rays of the radium and for this reason causes no sloughing. These implants, as they are called, are inserted or buried in malignant tissue and the rays given off destroy it. They mark a great improvement over the steel needles and glass implants formerly used.

When radiation therapy is considered or advised, a number of questions arise in the minds of physicians and patients. How much good will it do? What are the chances of getting well? What kind of growths respond to it? Is radium better than x-ray or vice versa? Is it painful? And so forth.

We can answer these questions much more accurately and precisely now than we could 15 or 20 years ago. Like many

other new methods of treatment, the value of radiation therapy first with the x-ray, then radium, and finally deep x-ray, was grossly exaggerated. The enthusiasm of this early period has been tempered by experience and a vast amount of research so that we know now that radiation has its limitations and what the limitations are.

It is possible, moreover, to tell in advance with considerable certainty what types of cancer will respond well to radiation, what types can be completely eradicated, and what ones palliated. This response to radiation is dependent upon a number of factors, the most important of which is radiosensitivity. It has been known almost from the start of radiation that some cancers seemed to respond much better than others. This phenomenon was supposed to be due to greater sensitivity of pathologic cells and tissue, that the radiant rays picked out the pathogenic cells and destroyed them, leaving the more resistant normal tissues unharmed.

This is only partly true. We know now that it is the young, immature cells that are radiosensitive while the mature, adult cells are more resistant. Furthermore, those cells that have a short life cycle are sensitive, so that immature cells with short life cycle are most radiosensitive. These two factors determine the radiosensitivity of any tissue, and we have learned that each tissue of the body has a specific radiosensitivity varying within narrow limits.

All the tissues in the body are vulnerable to radiation if the exposure is sufficiently intense. Within therapeutic limits malignant new growths composed of immature cells with short life cycle are particularly

sensitive to radiation. For this reason growths due to lymphosarcoma, Hodgkin's disease, lymphatic and myelogenous leukemia, disappear with remarkable rapidity. They are, however, exceedingly difficult to eradicate completely because metastases develop so early and are so widely scattered in the body.

The accessibility of a growth has considerable bearing on its successful radiation. This means not only its position on the body surface but also its depth or the amount of healthy intervening tissue. When radium or x-rays have to penetrate a thick layer of healthy tissue to reach the growth, the problem of the radiologist is to deliver a lethal dose to the growth without injuring the intervening tissue. New growths in the brain, chest, and abdominal cavity are difficult to treat for this reason.

Metastases of malignant new growths are in reality the *problem* in all forms of cancer therapy. Take out of the picture this peculiarity of cell transference or of the transferred cell to multiply in malignant growths, and the problem becomes easy to solve. The development of metastatic growths adds greatly to the difficulties of radiation treatment, yet even here we know in advance from experience in what types of growth metastases develop earliest and where they are most likely to occur. As a rule, the metastases have the same sensitiveness to radiation as the original growth, but their location may make them less accessible. There is one notable advantage in radiation so far as metastases are concerned: that is, they may be anticipated and the regions where they are most likely to occur may be radiated before there is any clinical evidence of their presence.

One other factor, and the most important of all, is the length of time the growth has existed. As a corollary this implies the size of the growth. It is axiomatic that the earlier the growth, the more successfully it can be eradicated. Growths of long standing usually are large, involve important contiguous structures and there are metastatic growths. Radiation here can be only palliative at best.

Having in mind these general considerations, there is still the question of what kind of radiation should be employed—x-ray or radium, or both. Dr. Howard

Kelly stated years ago that radium radiation could be used to best advantage when the radium could be brought into direct contact with the growth. On the other hand, when the area to be radiated is large or the growth deeply placed, deep x-ray is better.

To be specific, cancer of the skin and mucous surfaces of the body is particularly well adapted to radium or radon radiation. Ninety per cent of skin cancers can be eradicated in this way. In the author's series of 65 skin cancers, 45 were treated five or more years ago, and of these 39 are living and well, and 6 have died. Three of these were far advanced when the treatment was undertaken.

Cancers of the lips, tongue, tonsils, larynx, jaw, antrum, bladder, prostate, penis, vulva, clitoris, cervix uteri, and rectum are suitable for radium irradiation.

In cancer of the uterine cervix, radiation has become the method of choice. Early cancers of the cervix are rarely seen. Many that appear to be early have already developed metastases. Radical removal by the method of Wertheim is attended by a mortality rate of 20 to 25 per cent, while there is no mortality with radiation. If radical removal is undertaken, radiation should follow without exception. In the author's series of 76 cervical cancers, 58 were treated over 5 years ago, and 10 are living and well. In the entire series only one could be classed as early. Curiously enough, 2 other living cases were radiated after surgical removal—one, eight years ago, the other, six years ago.

Cancer of the lymphatic glands, lymphosarcoma, Hodgkin's disease, lymphatic and myelogenous leukemia respond well to either radium or deep x-ray. The location of the lesion determines which can be used to best advantage. On the other hand, malignancy involving large areas or metastases scattered widely as in breast cancers and cancer within the abdominal cavity are more effectively treated by deep x-ray. Radiation of the marrow of the long bones in leukemia, and cancer of the lung, belong in the field of x-ray.

There are many situations calling for a combination of surgery with x-ray. It is better for surgery to precede radiation, although this opinion is not held by everyone. In breast cancer after extirpation, every patient should be radiated by x-ray, no matter whether the growth is early or

advanced, whether metastases are found or not. Surgical extirpation of cancers within the abdominal cavity should be followed by x-ray in most instances.

One of the most important uses of radiation is palliation. With our hopes fixed on complete and permanent cure as the primary objective, we often forget the merciful effects of palliative measures. With such a large percentage of our cancer patients in the advanced stage, any and all measures that will make the last weeks and months of life more bearable is decidedly worthwhile. In advanced, inoperable breast and uterine cervix cancers, this can be done. Offensive discharges and ulceration may be controlled. In many intra-abdominal cancers the same is true.

The after effects of radiation are of some importance. The cosmetic results about the face where radium is generally used are remarkably good. There is practically no scarring when used about the lips, nose, or eyes, and there is no disfigurement. Both radium and x-rays can be applied without a general anesthetic in all

but a few situations, and there is practically no convalescence. Hospitalization as a consequence is short and in many instances is not necessary at all. Finally it is attended with a negligible mortality.

#### SUMMARY

1. Radiation of malignant growths has been accepted as a most valuable means of treatment the world over, both alone and in conjunction with surgery.

2. Successful treatment depends upon the early detection of the growth, its accessibility, its radiosensitivity, and the presence or absence of metastases.

3. Radium or radon is best used in growths of the body surfaces where it can be brought into direct contact with the growth and when the growth does not cover too large a surface.

4. X-ray is best used when the growth is beneath the body surface or when it covers large areas of body surface.

5. As a palliative measure, it contributes greatly to the comfort of those who are incurable.

## THE RELATION OF RADIATION TO THE CANCER PROBLEM

ARTHUR F. HOLDING, M.D.

*Albany*

There are two points about treatment which have not been covered in this symposium: expense and electrocoagulation.

It is a regrettable economic fact that most new scientific medical discoveries and inventions increase the already high costs of treatment. In scientific medicine there is a constant temptation to increase our overhead by acquiring expensive new equipment which will never liquidate itself. Common examples of this are electrocardiographic equipment, audiometers, slitlamps and most outstanding of all, radium and x-ray apparatus.

At the Clinical Congress of the American College of Surgeons in 1930, one of our leading authorities on cancer read a paper on "Cancer Institutes"<sup>1</sup> in which he said: "Finally, there is one very compelling factor, and that is expense. I think it would be quite questionable wisdom to attempt to establish a Cancer Institute without an endowment of about \$10,000,000."

Of course such arguments defeat themselves by their own immensity. Fortunately

among the leading authorities in cancer treatment are scientists who have been forced to perfect radium and x-ray technics that men of moderate means can utilize provided they will organize themselves in tumor clinics and underwrite the overhead by cooperation instead of individualism.

The radium technic perfected at the Curie Institute at Paris, and rapidly coming in vogue throughout the world, requires small amounts of radium, heavily filtered through platinum, applied for a long time.

An important and recent improvement in x-ray equipment is the valve rectified deep-therapy apparatus. This is noiseless, has no moving parts, runs without motors, produces no sparks in air, is over 50 per cent more effective in delivering a depth dose, causes less roentgen sickness, and can be used to deliver many more R units to a given area of skin with less skin irritation than the old motor-driven rotating switch rectifiers. X-rays heavily filtered can be

safely used to deliver three or four times as much x-rays as was formerly considered safe, with a consequent improvement in the percentage of cancer sufferers who may be unproved and at times made symptom-free

A consideration of expense of cancer treatment leads us to evaluate the economy and efficiency of cautery and electrocoagulation. While we do not wish to belittle the accomplishments of the more expensive methods of treatment, namely, radium, x-ray and surgery, we are inclined to believe that future generations will see that we have overexploited them almost to the point of neglecting the simpler, less expensive methods of heat or coagulation which are more rapidly carried out and often as effective as more expensive methods.

To use all these methods effectively is necessary in treating cancer by modern methods. No man can be efficient and enthusiastic in using all these methods. Therefore a group attack on cancer is necessary and more effectual than treat-

ment by a single method or a single individual.

In closing, we wish to return to the most important topic in a symposium on cancer "The Importance of the General Practitioner in Cancer," and quote from Dr. W. C. MacCarthy.<sup>2</sup>

If we wait for the classical textbook signs and symptoms of cancer before instituting treatment, we shall never recognize early cancer, early cancer produces no signs and symptoms characteristic of the disease.

In connection with educational campaigns I would suggest that one or more authorities on the scientific and clinical aspects of cancer be financially endowed to carry on an intensive educational campaign among general practitioners who do not have time to attend medical societies. Whoever undertakes such educational work should be financially independent and free from any criticism of seeking consultation for private remuneration.

Face the facts—*The vast majority of tumors can be controlled if recognized early.*

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- <sup>2</sup>MacCarthy, W. C. The Size of Operable Tumors. Am. Jour. Canc. 17:25, 1933.

### A DOCTOR'S CREDO

The doctors are doing a great deal of strong thinking in these critical times, and from time to time we find the results of their thought expressed in clear vigorous terms. An address of much power, full of stimulating ideas was presented at the annual secretaries' conference of the Indiana State Medical Association a few weeks ago by our Dr. Nathan B. Van Etten. He closed with these thirteen points of his creed—well worth quoting.

I believe that America needs young physicians who have strong characters and are well educated.

I believe that character should stand first in the qualifications of the medical student.

I believe that the undergraduate curriculum should contain the teaching of clinical medicine only, together with its public and private application.

I believe that the teaching of the specialties should be postgraduate only.

I believe that hospital internes should be assisted in the completion of their education by payment of a small monthly stipend during the period of their service.

I believe that ambulances should be served by mature persons only and that they should be paid for this service. I should like to see this work undertaken at the end of the internship so that there would be six months of ambulance training.

ing in emergency diagnosis which would give the young physician a lively experience in a great variety of situations and a most valuable immediate preparation of his life work.

I believe that the number of licentiates to practice medicine should be maintained at the ratio never higher than one to one thousand of our citizens.

I believe that all tax supported hospitals should admit to beds or clinics all emergent cases of accident or illness regardless of financial status and in addition should admit only those citizens whose indigency makes them public wards.

I believe that tax supported hospitals should open all their facilities to all reputable and competent physicians who live in the tax paying district.

I believe that tax supported hospitals should include in their budgets minimum payment for the services of all physicians in both wards and clinics.

I believe in practicability of a county health unit directed by the county medical society and operating without state aid.

I believe in equal opportunity for all physicians forfeitable only by immorality or incompetence.

I believe that the medical profession in America can and will courageously advance to new heights of distinguished service.

A facetious Congressman, addressing the Kentucky State Medical Association, said that the

doctor's grammar runs something like this: "Positive, ill, comparative, pill, superlative, bill."

## PAPER AS A MEDIUM FOR LESS EXPENSIVE CHEST DIAGNOSIS

MARGARET W. BARNARD, M.D.

*New York City*

During the summer of 1931, in the Chest Service at Bellevue-Yorkville, we were interested in evaluating the various procedures for chest diagnoses—physical examination, fluoroscopy, and x-ray. It was at that time that our attention was drawn to a new paper film which was about to be placed on the market by one of the x-ray manufacturing firms.

After preliminary trials, the National Tuberculosis Association requested the Bellevue-Yorkville Health Demonstration to make a thorough test of the paper films to determine their technical merits. This was carried out as a study of 1,000 cases in which celluloid and paper films of each patient were taken and the findings compared.

The paper film consists of a rather stiff paper coated on one side with an x-ray sensitive emulsion. This is placed in the cassette with the emulsion away from the tube. While it is preferable to have only one screen in the cassette—the one next to the emulsion—the front screen does not materially interfere. The technic will be described later.

The exposed films are clipped in the regulation holders and developed in the ordinary manner. It has been found that the developer made by the same firm is quicker in its action than the solution which was previously used, and causes less softening of the paper. Since this developer is equally good for celluloid films, the simplest arrangement in a clinic where both types of films are used is to have only one developing tank and to use this solution. The question arose whether the paper films would soak up the developer, thereby using more solution and adding to the expense. It was found that an equal number of paper films or celluloid films could be run through a given amount of developer. There was no difference in the amount of solution used. Therefore, in making the exposures, we have become convinced that it is practicable to use paper and celluloid films interchangeably in a clinic with the same apparatus and developing solution.

The developed film is a positive and is read by direct, instead of transmitted

light. It has been our experience that the sense of shadow values on the positive is easily acquired.

In reading the comparative films of the 1,000 cases, the paper films were read first and the findings recorded. These were then checked by the celluloid films. Only 5 cases out of the 1,000 were missed which were of clinical significance, an error of only 0.5 per cent.

In July, 1932, the routine use of paper films was introduced in the District Tuberculosis and Cardiac Clinics at Bellevue-Yorkville Health Center. In about 95 per cent of the cases the examining physicians ask for paper films. Our present standard of decision is that in all cases of manifest disease, routine check-up, pneumothorax refills, and cardiacs, paper is adequate. The celluloid is reserved for cases which require further study, usually for very young children, where the most rapid exposure obtainable is desired.

The introduction of these paper films in the clinics has resulted in a large saving of money without any detriment to the service. The developed celluloid film costs us, at City prices, approximately 60 cents, whereas the paper film costs 30 cents. In these days of the problem of maintaining standards of service in the face of shrinking budgets, this is a significant saving.

These paper films are now on the market and may be purchased in sheets of all the standard sizes.

The x-ray manufacturer, using the rolls of paper film in a special camera, has devised a series of carefully coordinated units of procedure designed to make, develop, identify, interpret, and file radiographs at a high speed, permitting large numbers of persons to be x-rayed in a short time at a very low cost.

The subjects strip to the waist and then put on cotton slips which do not interfere with the subsequent x-ray procedure making it possible for them to wait in large groups without embarrassment. As they file past a typist, seated before a special electrically operated typewriter, each subject steps on a direct-reading dial type of weighing scale, adjacent to which is an

upright standard plainly marked in inches. The typist records on a special card made of lead and cardboard, all data required, such as name, address, age, sex, color, height, and weight. This typed card is handed to the subject who, in turn hands it later to the x-ray operator. These cards can be easily typed at the rate of three per minute.

The subjects then stand in line waiting to be x-rayed. The machinery is carefully shielded, so that no harm can come to those in line. Two technicians are employed, one to place the subject in position, the other to make the exposure.

The radiographic unit consists of a standard x-ray generating equipment and tube, and a new form of magazine cassette designed for very rapid operation (Fig. 1).

The cassette holds a roll of paper film fourteen inches wide and 150 feet long, sufficient to make one hundred radiographs 14 by 17 inches each. Provision is made for changing rolls or reloading in daylight.

The cassette contains a suitable mechanism for measuring and feeding successive portions of the paper film into position for exposure and for placing the intensifying screen in close contact with the sensitized side of the film. But one intensifying screen is used, located on the opposite side of the film from the tube.

The cassette is quickly and easily adjustable in height to suit the subject being x-rayed. A quickly adjustable compression band permits the holding of the subject closely against the face of the cassette. This compression band can be moved instantly to bring it to the proper height on the subject. Actuated by the compression band mechanism is a pointer which registers on a dial the thickness of the chest of the subject and indicates to the second operator the proper amount of radiographic energy to use for that exposure.

The tube support is linked up with the cassette and the compression band in such a manner that the tube is always automatically at the height of the middle of the compression band. No time, therefore, is wasted in adjusting the position of the tube, which is always centered on the vertical median line of the cassette.

**Technic.**—For the sake of speed in operation, three of the four controllable variables, *viz.*, time, distance, amperage, voltage, have been standardized. The time

is usually 1/10 second (occasionally 3/20 for very thick chests). The distance from the tube to film is 40 inches. The amperage is 100 ma. The voltage is then changed to suit the chest of the subject and varies from 60 to 80 kv.

By means of this coordinated mechanism, designed to simplify the necessary operation of changing films and positioning the subject and tube, it is possible for two technicians to x-ray subjects at the rate of four per minute. A convenient rate of one hundred and fifty per hour can be maintained without any difficulty, over a long period of time.

This speed of taking x-rays would, however, not be of much value unless the procedure of developing and interpreting could also be carried out with equal speed.

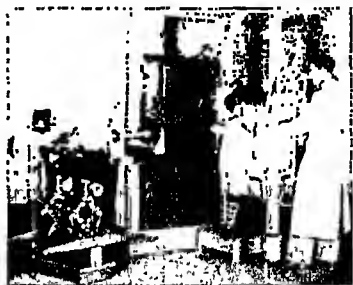


Fig. 1.—Radiograph unit for chest.

The finished rolls are taken immediately to the manufacturer and developed in the roll form, fixed, washed, dried, and rolled on a spool ready for interpretation, and returned to the owners.

**Viewing Box.**—For interpretation, the roll is placed in the viewing cabinet in which the films are properly illuminated through daylight glass. The films are successively turned for viewing. Any abnormalities noted may be marked directly on the film. A convenient and time-saving method of recording film findings is for the interpreter to dictate into such a device as the ediphone, from which the records can be transcribed.

**Filing.**—The rolls, properly indexed, form a convenient method of filing for large groups, such as school children or factory employees. It is a simple matter to put a roll on the viewing cabinet and run it through to the desired picture. One great advantage is that, while the single

films can be made to burn, the rolled films can be made to burn only with the greatest difficulty and no obnoxious gases are generated. Therefore, fireproof filing is not necessary.

An illustration of the use of this method is the recent work project conducted under the direction of Dr. Shirley W. Wynne, under an appropriation by the State Relief Committee for Medical and Nursing Service. Eleven thousand individuals, 10 years of age and over, from families on home relief in the Central Harlem Health District were x-rayed in six weeks' time, and follow-up clinics for the positive cases and their contacts were established. Since this is an area where the prevalence

of tuberculosis is unusually high and the tuberculosis mortality is several times that for the City as a whole, it was considered of the utmost importance to discover and place under care all cases of tuberculosis which might be foci of infection. However, it seemed an impossible task until this rapid survey method became available.

Enough of these rapid x-ray surveys have now been carried out, so that we are convinced that, if a group of individuals in which there is a high prevalence of tuberculosis can be selected and controlled, this procedure offers the most rapid, efficient, and least expensive means of case finding now available.

325 EAST 38TH ST.

### THE WORLD'S "BEST PAID MAN"—THE DOCTOR

This rather startling description may cause some of us to glance in the mirror and wonder if the man we see there is really the one who is meant. "The best paid man in the world!" That is the diagnosis of a Virginia physician, Dr. Beverley R. Tucker, in a letter to his state medical monthly. In the first place, remarks this cheerful practitioner, the doctor is required to have an education which will be a benefit and a comfort to him all the days of his life. He wins a degree and attains the honorable title of doctor. He learns to know more intimately his fellow man than anyone else can know his fellow. He gets praise for many things that he does not deserve and providence and disease are blamed for his mistakes. He wins the gratitude of those he serves. His charity work is invaluable to his experience. If he is reasonably conscientious and works reasonably hard, he builds a practice that will insure him a good house,

office, and automobile, and enable him to rear and educate a family and to stand the losses of the inevitably foolish investments he makes. If he has taste for invention, there are innumerable unknown instruments and improvements awaiting him. If he wishes to discover, the laboratory is ready for him. If he likes research, the facilities and libraries are available. If he craves adventure, insidious dangers lurk around him, and there are ever pioneer fields to enter. In his endeavors his government, his community, and his fellow physicians stand ready to aid him. He is an advocate without a jury, a judge without a court, a minister without a surplice, a business man without guile, a farmer whose soil is the human body and whose crops are human health and happiness, and he is a laborer without a boss. The physician is the best paid man in the world.

### HARD TIMES AND INSANITY

A striking increase in the admissions to the mental hospitals in the State has marked the years of the depression, reaching an all-time peak in 1933. The sharp rise may be realized when we learn that in 1910 the rate of incidence of mental disease as shown by first admissions to hospitals was 65.3 per 100,000 population; in 1920 it was 69.8; in 1930, 76.6; in 1933, 84.7, the highest in the history of the State.

The annual increase, "with improving business, should be less than it had been during the last four years," says Dr. Frederick W. Parsons, head of the State Department of Mental Hygiene, and he adds that "Even the present year so far shows a reduction from last year of approximately one-third in the rate of increase. It follows that as business improves and family incomes increase, relatives become less reluctant to remove patients progressing toward recovery. These relatives are now able to do what could not be afforded twelve months ago."

Dr. Parsons cited a big increase in admissions in the "alcoholic group" rising to 706 during 1933, which marked the end of prohibition, but

he pointed out that repeal did not come until late in the year.

"The cases of alcoholism in preprohibition days were slightly in excess of 10 per cent," he said in a statement. "The rate began to decline in 1912, falling steadily to 1921, when the low point of 2 per cent was reached."

"Then it began to mount until 1927, when it was 7 per cent. In the succeeding six years it ranged from 5.8 per cent to 6.5 per cent. The postrepeal period has not been sufficiently long to justify predicting the trend."

Discussing the increase in admissions, Dr. Parsons said: "For years New York State did not have sufficient accommodations for its mentally disordered residents and about ten years ago it embarked on a building plan. An overcrowding of 35 per cent has been reduced to 12 per cent."

"Today less than 5,000 more beds are needed, and during the calendar year of 1934 3,500 beds will come into use. Buildings now under construction will supply 3,800 beds in 1935, and 1,000 more beds in 1936."



# CASE REPORT

## A SECOND ACUTE PERFORATION OF MARGINAL ULCER

EDWARD V DENNEEN MD FACS

Assistant Surgeon Bellevue Hospital New York City

Acute perforation of a marginal ulcer is unusual. Herewith is presented a case of a patient with recurrent perforation of marginal ulcer and with recovery.

This patient, a male 27 years old, was first seen January 30, 1933, when he was admitted to the Fourth Surgical Service at Bellevue Hospital, of which Dr Carl G Burdick is Director.

His past history is of gastroenterological importance. In 1928, he first had pain in the epigastrium accompanied by nausea and vomiting after meals. A diagnosis of duodenal ulcer was made and he improved on a Sippy diet. Six months later he was taken to St Marks Hospital suffering from a severe gastric hemorrhage. A blood transfusion was given and later a gastric resection was performed. At this operation, an ulcer the size of a ten cent piece was found on the anterior surface of the duodenum about  $\frac{1}{2}$  inch from the pylorus. There was no perforation. The pylorus,  $\frac{1}{2}$  of the stomach, and first portion of the duodenum were removed, the duodenal stump was closed and a retrocolic Polya end to side anastomosis was performed between the stomach and jejunum.

He felt well for two years but in 1932 returned with a severe hemorrhage from a marginal ulcer. Following a transfusion, he felt fairly well, having but slight abdominal pain until May, 1932, when he had a sudden, severe epigastric pain. He collapsed and was taken to the Peoples' Hospital where operation revealed an acute perforation of a marginal ulcer in the jejunum about 1 inch distal to the anastomosis. At that time, no kinking was noticed. The perforation was closed and the peritoneal cavity was drained. Since this operation he has had severe burning pain in the epigastrium, indigestion, belching of gas and severe constipation.

At 4 A.M. January 30 1933, he awakened with severe abdominal cramps no vomiting but much belching of gas. The pain was cramp like, with intervals of freedom from pain. Physical examination at Bellevue Hospital showed an acutely ill, pale man with a fever of  $102^{\circ}$  F pulse 100 respirations 24. General examination was negative, except for abdominal signs and hemorrhoids. The abdomen was not distended, there was a right rectus scar from ziphoid to symphysis, there was board like rigidity, with tenderness greatest in the right lower quadrant, the liver dulness was not obliterated no masses were felt. Emergency x ray examination gave no indication of an intestinal obstruction. White blood cells were 14600 with 88 per cent polymorphonuclears. Urinalysis was negative. The preoperative diagnosis was acute perforation of marginal ulcer with acute peritonitis.

Operation was performed January 30, 1933, an

upper left rectus incision being employed. There was a large quantity of gastric and duodenal contents in the peritoneal cavity with redness and injection of the peritoneal surfaces. A perforation about the size of a pea was found in the jejunum  $\frac{1}{2}$  inch from the margin of the retrocolic anastomosis to the resected stomach this area being covered with plastic material and signs of an early acute suppurative peritonitis of the severity usually found in a ten hour perforation. At the gastrojejunal anastomosis there was a marked kinking. The proximal jejunum had been anastomosed to the greater curvature and the distal at the lesser curvature. The kinking and inflammation probably from the previous perforation of May 1932, left at the present time an inlet to the stomach from the jejunum admitting the index and middle fingers and an outlet from the stomach not admitting the little finger. That is, there was an obstruction at the outlet from the stomach.

Because of the peritonitis no revision of the anastomosis could safely be attempted. The perforation was sutured with dulox, intestine and omentum were sutured over the perforation, and an entero enterostomy done between the proximal jejunum and jejunum about 2 inches distal to the perforation, the anastomosis being 3 inches in length and sutured with dulox. The abdominal incision was closed with one cigaret drain intraperitoneally.

The convalescence was rather uneventful, there being a temperature of  $103.5^{\circ}$  F on the first day, gradually declining to normal on the seventh day. The patient went home on the sixteenth day on a Sippy Diet, with the operative wound healed.

He was seen in the Gastroenterology Clinic at Bellevue Hospital five times during the early part of 1933 and felt well as long as he adhered to his ulcer diet. On May 22 1933 a hemorrhoidectomy under caudal anesthesia was performed for bleeding hemorrhoids and a blood transfusion was given for a secondary anemia with 60 per cent hemoglobin. He has gained 20 lb since operation and feels well except when he commits a dietary indiscretion. A gastro intestinal x ray examination was done on January 18, 1934, by Dr Buckstein at Bellevue Hospital. He reported Gastrojejunostomy functioning. Stoma narrow. Evacuation of gastric contents occurs in spurts. No tenderness elicited.

This case is interesting because acute perforation of marginal ulcer is rare and because it portrays the dramatic possibilities of a peptic ulcer and its complications even under medical treatment and a noncure despite surgical treatment with no assurance that further trouble will not follow.

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## EDITORIALS

### Is this Criticism Just?

The charge is made by the editor of a radiological journal that few physicians are acquainted with the indications for and uses of radiation therapy. Many of them, he remarks, seem to think that its use is limited to a few diseases and, at that, is only a palliative measure. Even some who have seen what it can do for cancer, he adds, are reluctant to accept it or concede it its just place in the treatment of that disease.

The editor of *Radiology* seems to believe that "the splendid accomplishments in the cure of cancer with radiation therapy, resulting from long and continuous scientific research in the fields of physics and biology, are known to but few physicians." He attributes this condition to the rapid advance in the science of radiology, the construction of x-ray apparatus of greater magnitude and precision, and the practical application of the very short wave lengths made possible by the new and powerful transformers. Then, too, it seems, the radiologists are so hesitant that they do not like to report results until they can speak with surety of "five-year cures."

For this reason the rank and file of the medical profession do not hear a great deal about the excellent results of radiation therapy, while they are inundated with reports of the surgical treatment of cancer, set forth in all the medical and surgical journals.

This critic is especially stirred by a recent symposium on the curability of cancer which played up surgical treatment and rather slighted the treatment by irradiation therapy. He, therefore, proposes to gather and publish the statistics on five-year cures of cancer with radiation therapy, with a résumé of the progress made during the past few years of rapid advance. This will be educative in enlightening the medical profession in general and will also be of value to the radiologists themselves.

There can be no question, of course, that such information will be of value, but is it a fact that the medical profession are so far behind the times as he seems to think? Every doctor, it is true, is not an expert radiologist, but neither is he an expert in every other line. Our medical system is so admirably organized that a specialist in any branch who may be needed is usually within reach, and the general practitioner is accustomed to turn to him. The doctor who encounters a case of cancer turns to the cancer specialist. Is it supposable that a cancer specialist is not familiar with treatment by radiation therapy? Visit all the first-class hospitals from the Atlantic to the Pacific and ask if they do not have departments for treatment by radiation. We may well grant that the doctor may profitably learn more about radiation therapy, just as he can profitably have more knowledge of any kind, but we may equally well maintain that the doctor is aware of its benefits and is ready and eager to use it whenever advised by specialists whose duty it is to know its methods and results from A to Z. The collection and publication of complete statistics and reports on what it has done will be a work of great value and the entire profession will look forward to it with the highest interest and anticipation.

## Dangerous People at Large

If we knew that 6,442 persons were at large who were liable to attack their neighbors with knives or axes and inflict dangerous and disabling wounds, the public alarm would be at fever heat, and the police would be called upon to capture them and put them behind the bars. But when we read that in 1933, 6,442 persons infected with syphilis discontinued treatment at the New York State clinics without permission and went out to mingle with society with no restraint, nothing whatever is done about it.

They may have been made temporarily noninfective, but it is considered improbable by the State Department of Health that they have had a sufficient number of treatments to make relapses infrequent. Due to the inadequacy of treatment, it is expected that a proportion will again become infective and through promiscuous habits will spread the disease. Furthermore, figures show that approximately 5 per cent of syphilitics develop paresis or tabes dorsalis. On this estimate some 322 of the 6,442 will become paretics, and the State health authorities reckon that it will cost the State about \$385 per year to care for each of them. Our statistical experts have found that paretics drag out their unhappy existences for approximately 24 years from the time they enter the doors of the state hospitals till released by death, so the cost of maintaining this unfortunate group will be nearly \$300,000. Then in addition the investment for state hospital facilities per inmate is put at about \$4,000, so that the hospital facilities enjoyed by our parietic company will represent an investment of over \$1,250,000.

All because these dangerous persons are permitted to walk out of the clinics at their own sweet will and mix freely in society with no one to exercise the slightest restraint. Far less damage is done each year by mad dogs, by pyromaniacs, by South Sea cannibals, or the head hunters of Borneo, but the facts are not even published in the daily papers, where a calf with two heads gets a place on the front page.

How Denmark has stamped out syphilis was related in an editorial in our issue for April 15. It was done by treating it as we

treat any other contagious disease. We would not dream of letting people wander about the streets with smallpox, scarlet fever, or measles. So Denmark makes treatment for syphilis compulsory and visits infection of other persons with severe penalties. The plan works. The ailment has virtually disappeared. Why not learn something from this example?

## Doctors and Narcotics

One in every 1,000 of the population of the United States is a drug addict, according to the estimate of the United States Public Health Service. This would give a total army of some 125,000 victims, a pitiable horde, certain to cause endless trouble, social, criminal and medical, all their lives, and with no sign of decreasing numbers. It is a problem of peculiar interest to the physician, as he may very likely number some of the addicts among his clientele, and has in his hands the power to prescribe or withhold narcotics. It is true that the physician is not permitted to prescribe them merely to maintain the addict's customary use, and can do so only for the cure of the addiction or the treatment of disease, as has been repeatedly declared by the United States Supreme Court, but the borderline is not always clear, and a doctor may often be trapped into granting the wishes of a patient who presents a pathetic plea and a score of ingenious justifications.

What is more, the physician himself, harried and worried, worn down by sleepless vigils and irregular meals, sometimes resorts to the false succor of narcotics, and falls a victim. H. J. Anslinger, United States Commissioner of Narcotics recently addressed the Federation of State Medical Boards of the United States on this subject, one of deep interest to the medical profession. About three years ago he had an informal survey made by the field officers of the narcotic service to locate the addicts among the total number of practitioners or druggists registered to prescribe or dispense narcotics. The names of about 1,700 such registrants were furnished, he says, "most of them being in the practitioner class." This would be about 1 per cent of the profession and would put the United States on a level with Ger-

many in this respect, for, observes Mr. Anslinger, in both countries, according to reliable statistics, one in every 100 of the medical profession is an addict. Germany's general population, on the other hand, has only one addict in 10,000 to our one in 1,000.

The Narcotic Bureau is trying to eliminate the registrants who are addicts, or are engaged in traffic in narcotics by having their licenses revoked by their State authorities. The law now in force in this State and in New Jersey, Florida, and Nevada provides for the revocation of the licenses of physicians convicted of violation of the narcotic law. The Bureau reported to the various State licensing boards the names of 360 physicians convicted of violating the Federal Narcotic Law, 302 others found to be addicts, and 12 accused of gross narcotic irregularities. Only the flagrant cases were reported. Thirty-one of the accused were licensed in more than one state, so that the total number of reports were 705. Of these, 39 had their licenses revoked, 5 were suspended, 24 put on probation, 20 admonished, 66 cases dismissed with no action, and 42 were not licensed.

New York State shows up very favorably in the detailed table that accompanies Mr. Anslinger's paper. Contrasting with States having 30, 40, or 50 reported for narcotic irregularities, this State had only 9—3 reported for conviction, and 6 for addiction—miles away from the "one in 100" pictured in the profession as a whole. Of the 9, but one had his license revoked, 7 cases were dismissed without disciplinary action, and one was found not to be licensed. It would be hard to imagine a cleaner record.

This fine bill of health, however, need not blind us to the perils of the larger general population problem. All efforts so far seem unable to cope with it. Clinics established in New York and other places throughout the country tried the experiment at one time of furnishing addicts with nondiminishing doses, with the idea of giving them comfort and stability, but the plan proved unworkable. Dr. Walter L. Treadway, of Washington, pointed out in the course of the discussion that this

scheme brought on uncontrollable abuses. Addicts swamped the clinics, irregularities crept in, and the federal government had to condemn the practice.

Acting on the same principle, adds Dr. Treadway, well-meaning but misguided physicians have, through sympathy, furnished addicts with drugs to satisfy addiction and subsequently found themselves overwhelmed with individuals demanding drugs. As a result, the physician accidentally finds himself in the position of a trafficker in these substances. The laws of the land have made certain professional groups the custodians of these perilous substances. They have the problem, together with the officers of the law, of eradicating or modifying this evil, if it can be done. It certainly could be in no better or more competent hands, and the earnest efforts now being made may well assure us that on time a way will be found to cope with it.

### Vacation Typhoid

There is a tendency to be lulled into a false sense of security by the sharp fall in the death rate from typhoid fever in recent years. We shall do well to remember that the danger is there, just as menacing as ever, and that the death rate for the victim is 100 per cent, no matter how low it may be for other people. Now is the time when families are starting gaily out on their vacations, drinking from strange sources of water supply and milk supply, and bathing in waters filled with all the germs in the catalogue, and it is the duty of the family physician to drop a word of warning.

Automobile touring is growing more and more popular, and the families jaunt from hotel to hotel, or from camp to camp, often without the slightest thought of where the water or milk come from. People who wish to enjoy their vacations, instead of spending the summer in a hospital, should take the trouble to ask a few searching questions about these supplies. If the answers are doubtful, it is perfectly easy to boil the water and to pasteurize the milk by heating it in a double boiler to 145 degrees F. and holding it at that temperature for half an hour. This makes it safe without impairing its taste or digestibility.

Lakes and rivers bordered by summer hotels often receive their sewage, yet are used by the guests for bathing every day, braving the bacilli with the valor of ignorance. Cases are not unknown where hotels discharge their sewage into the same lake where they get their water supply. Protective inoculation is certainly a wise precaution. It should be kept in mind, too, that typhoid immunity usually requires from six weeks to two months to develop its highest efficacy and families going on vacation will do well to start their course of protective inoculations without delay.

## Correspondence

Anonymous letters will not be noticed. All communications must carry full name and address of the writer, but these are omitted on request.

### NEONATAL MORTALITY

To the Editor:

I was very much interested in your editorial on "The Tide is Rising," in the June 15, 1934, issue of the *NEW YORK STATE JOURNAL OF MEDICINE*. In the June, 1932, issue of *American Medicine* I discussed the "Neglected Factors in Comparing Maternal Mortality Rates," but as a pediatrician I am still more interested in the causes of neonatal mortality. In your editorial you quote Dr. Parran as stating that last year in New York State 3,000 babies died in the first day of life and another 3,000 died in their first month. In a paper on "Some Factors in the Infant Mortality Problem" published in the *NEW YORK STATE JOURNAL OF MEDICINE*, September 1, 1928, I showed that the high neonatal mortality is not due primarily to lack of care and skillful treatment. While the infant mortality during the first year has been reduced more than 50 per cent in the last twenty years, the neonatal deaths remain about the same, because only a small number are preventable with the method now at our command.

Some years ago, Holt and Babbitt reported, in the *Jour. Amer. Med. Assn.*, January 25, 1915, a study of 10,000 consecutive births at the Sloane Maternity Hospital. The neonatal mortality during the first fourteen days was 3 per cent, and half the deaths were ascribed to congenital debility chiefly due to prematurity. There can be no question as to the skillful conduct of labor and the adequate care of the infants. This mortality rate was about the same as for the entire city of New York, and the rate given by Dr. Parran for the State.

The limitations of prenatal care should also be recognized. This together with improved obstetrics will reduce the deaths due to syphilis, toxemia, the accidents and injuries of labor, but a large number of miscarriages, premature, stillbirths, and neonatal deaths cannot be prevented by methods now at our command. A marked reduction will be possible only if there is a change in the character of the mothers, either through an improved type of immigrants or if conception is prevented in the unfit.

CHARLES HERRMAN, M.D.

## Books (REVIEWED)

**Surgical Anatomy.**—By Grant Massie, M.D. Second Edition. Octavo of 458 pages, illustrated. Philadelphia, Lea & Febiger, 1933. Cloth, \$6.00.

The revised and enlarged edition of this work is filled with pithy material of the fundamentals of anatomy, to enable one to appreciate the application as well as the interpretation of anatomical problems which may present themselves in clinical medicine. The book covers valuable information which has been contributed in recent years. The numerous illustrations, many of which are schematic and photographic reproductions in color, render the text most comprehensible.

It is a noteworthy contribution to the surgeon's library, an aid to the general practitioner, and an asset to the student.

JACOB S. BRILLY

**The Practical Medicine Series.**—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery Series, 1933. Chicago, The Year Book Publishers [c. 1933]. The 1933 Year Book of General Surgery, edited by Everts A. Graham, M.D. 12mo of 826 pages, illustrated. Cloth, \$3.00.

This is a most satisfactory summation of the advance in surgical pathology and technique of the past year. The avalanche of surgical papers encountered in the medical press of today is carefully sifted and excellent judgment is evidenced in the selection of the material incorporated in this section of the Year Book. The reviewer suggests that every active surgeon browse leisurely through this volume. He will find it interesting and very instructive reading.

GEO. W. WEBB

**The Management of Fractures, Dislocations and Sprains.**—By John A. Key, M.D., and H. Earle Conwell, M.D. Octavo of 1164 pages, illustrated. St. Louis, The C. V. Mosby Company, 1934. Cloth, \$15.00.

This work is divided into two sections, Part I relating to "Principles and General Considerations," and Part II to "Diagnosis and Treatment of Special Injuries." The late Chas. E. Dowman has written an excellent section on fractures of the skull. Again and again the authors properly assert that early reduction of fractures and dislocations means easy reduction.

Nonoperative treatment is given first consideration, and the authors resort to open reduction only when other means, including skeletal traction, prove ineffective. The section on treatment in fracture of the neck of the femur is well considered, and it is emphasized that the general condition of the patient is more controlling than the special symptoms of the lesion.

The section on meniscus injury implies that the ordinary operator through a small incision can remove all the offending pathological products, in this respect, however, the authors endow the reader with too much visual or tactile acuity.

This is an excellent volume, especially for the more experienced exponents of traumatic surgery, and the authors out of a very wide experience are to be commended for advocating only those procedures which they have tried and not found wanting.

JOHN J. MOORHEAD

**Diet and Dental Health.**—By Milton T. Hanke. Octavo of 236 pages, illustrated. Chicago, University of Chicago Press [c. 1933]. Cloth, \$4.00.

For a long time students of nutrition have been concerned with the determination of those substances which are an essential part of the normal diet. Our present knowledge of the vitamins and of the so-called deficiency diseases is the outgrowth of such studies.

The interest of the dental profession in vitamins should be stimulated by the present studies of Hanke on the antiscorbutic vitamin (vitamin C). Dietary studies were made over a period of three and a half years, on a series of 341 children between the ages of ten and seventeen years, at Mooseheart. The results indicated that during the test period the children gained in height and weight at rates not only in excess of those present during the control period but also in excess of the normal rates calculated from the Baldwin tables. Other interesting results were obtained.

The material is ably and readably presented. 68 pages of tables present all the original data, an important and unusual inclusion, 40 plates in color give the salient features of dental pathology and show the observed changes in the teeth and gums. The study is thought provoking and should stimulate work elsewhere to confirm or disprove the author's hypothesis.

CARL H. GREENE

# Medicolegal

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## Malpractice—A Gratifying Decision by an Appellate Court

In an action defended by your Counsel the Appellate Division of the Supreme Court has just handed down a decision which not only rectifies a gross miscarriage of justice but is also of importance to every practicing physician.

In order to understand the force of the rule, it is necessary to set forth in some detail the facts of this case.

The plaintiff in this case, a man nearly sixty years of age, suffered an injury in the course of his employment through a fall from a scaffold by striking an iron bar which lay across a vat beneath. His employer sent him to a doctor for examination and an operation was advised for a condition of hernia. He was referred to a certain Dr. G., a surgeon, who examined him and found that he was suffering from a direct inguinal hernia on the left side, which required immediate attention, a slight indirect oblique inguinal hernia on the right side, and an umbilical hernia.

It was the opinion of the surgeon that the man's trouble on the right side was not such as to warrant operative interference at that time but that an operation should be performed on the umbilical hernia and on the direct inguinal hernia and that any condition on the right side should await the results of these operations and further observation by the surgeon of the patient.

The surgeon testified that prior to the operation he explained these facts to the patient and told him exactly the nature and extent of the operation to be performed. Admittedly, prior to the operation the plaintiff signed a written consent and the surgeon testified that he saw that written consent before the operation was performed.

Accordingly the surgeon operated on the umbilical hernia and also the left inguinal hernia. No operation was performed on the plaintiff's right side. He had an uneventful recovery and left the hospital in about three weeks' time. He promised to come back to the surgeon for further observation but never did so.

During the trial it was shown that some time later he had arranged for an operation on his right side by some other surgeon and went to the hospital for this operation, although the operation was never performed because the plaintiff would not consent to it, and plaintiff further gave the remarkable testimony that when he went to the hospital he had no intention of consenting to this operation on his right side.

Some time thereafter he instituted an action against Dr. G., the surgeon who operated upon him, Dr. H., one of the doctors who had examined him prior to the operation and who assisted at the operation but did not take any active part in it, and he also joined as party defendants the company which had employed him at the time of the injury and the insurance company which carried workmen's compensation insurance on behalf of the employer.

The plaintiff sought to recover damages against these defendants, claiming in substance (1) that he did not have any hernia on the left side and had not consented to any operation on that side; (2) that the surgeon was negligent in the performance of the operation on his left side; and (3) that the surgeon was negligent in failing to operate for the claimed condition on the right side.

The case came to trial before a Judge and a Jury and upon the trial the court directed a verdict in favor of Dr. H., who had simply made an examination but did not actively participate in the operation. The case was sent to the jury as to Dr. G., the employer, and the insurance company, and the jury returned a verdict in favor of the plaintiff and against all three defendants. From the judgment entered in this verdict all of the defendants appealed to the Appellate Division.

The judgment in favor of the plaintiff was reversed by the Appellate Division with a vigorous opinion in which the court plainly said that the plaintiff's testimony was unworthy of belief; that the surgeon

was fully justified in everything that he did and that as to the employer and the insurance company no liability could attach to them in any event because concededly they had selected a surgeon of recognized experience and ability in operations of this character

On the trial the plaintiff produced no medical testimony to the effect that the defendant physician had failed to follow proper and approved practice. He did produce a physician who claimed that about one month before the operation he examined the patient and found him suffering from an umbilical hernia and a right inguinal hernia, but that he had no left hernia. This doctor, however, did not have any proper experience in the field of hernias. He testified in part

'Q Are you a surgeon Doctor? A When I use a knife, I am a surgeon

Q We want to get some idea here. Do you do surgical work major, you know what major surgical work is? A Do I do surgical work?

Q Yes A No

Q Do you ever operate on hernias? A As an assistant yes'

He further testified in all his experience he had personally operated on only two hernia cases.

Upon the trial the plaintiff was forced to admit that the defendant surgeon had examined him prior to the operation on the left side as well as the right side.

Upon the trial we confronted the plaintiff with a consent to the operation which he was forced to admit he had signed. Although his signature was very legibly written exactly on the line provided by the hospital blank, he testified that he had signed this paper while partly stupefied by drugs and that it was signed by him while lying on the stretcher in the hallway leading to the operating room, the consent being held over his head by an orderly. He also gave the remarkable testimony that without his glasses he was not able to read and at the time of the signing of the consent he did not have his glasses with him. This amazing and untrue testimony was emphatically denied by the reception clerk in the hospital who had witnessed the signature and who testified that it was signed in the reception room of the hospital when the plaintiff first arrived there.

The Appellate Division in a scathing opinion branded the plaintiff's story as untrue and held that the surgeon was

fully justified in everything that he did. In the opinion the court said

"The plaintiff says that he went to the hospital to be operated upon for the umbilical hernia and a hernia on the right side, that he had no hernia on the left side, but that if he did have such a hernia, the doctor had no right to operate upon it, without his consent

"The plaintiff admitted that Dr G, examined his right side and his left side and also examined him for an umbilical hernia, that the doctor asked if he had pain on the left side, that he told the doctor he had no pain there. Regarding the umbilical hernia, there is no dispute, it being conceded by the plaintiff that he had such a hernia and no claim is made that Dr G was guilty of any malpractice in operating thereon

"While the plaintiff at first denied that anything was said about the left side, on cross examination he was forced to admit that fact

"Dr G testified that on June 12, 1931, the day before the operation, he met the plaintiff at the B Hospital and after obtaining his history made a very thorough examination of his abdomen. He says he found him suffering from an umbilical hernia and a direct inguinal hernia on the left side, that this latter condition was dangerous and required immediate attention. He also found symptoms of a slight indirect oblique inguinal hernia on the plaintiff's right side, but was of the opinion that plaintiff's trouble on the right side was due to adhesions which could be relieved in the course of the operation on the umbilical hernia. He said

'I asked him what he complained of. He said "Pain in the belly". He said he had been told that he had trouble with his navel and in the right groin

"In examining his abdomen I found that he had a protrusion at the side of his navel

"He had tenderness extending along the right side of his abdomen of his belly. On the right side he had symptoms of a small incomplete, indirect, oblique inguinal hernia. On the left side he had a direct hernia. The direct hernia on the left side permitted the introduction of the fingers directly into the peritoneal cavity in contradistinction to the one on the right side

"The doctor testified that the condition on the left side could not be discovered by looking at it and could not be ascertained except by introducing the finger, and that upon tugging upon the abdominal wall the patient complained of pain and a tender

area. The examination disclosed that the plaintiff was suffering not only from an umbilical hernia which everyone agreed upon, but from a hernia on both the right and left sides; the one on the left side being dangerous and requiring immediate operation for the reason that a direct hernia is potentially more dangerous than an indirect hernia. It was at this time that Dr. G. told the patient about the left hernia. . . .

"Dr. H., the doctor who had examined the plaintiff . . . and sent him to the hospital for the operation by Dr. G., assisted Dr. G. and saw the direct hernia on the plaintiff's left side when it was pointed out to him by Dr. G. He testified:

'Q. Now, in the meantime, after Dr. G. stopped his work on the umbilicus, did you observe what next step he took so far as the left inguinal hernia was concerned? A. He started ahead on the left inguinal and when he got it open, then he called my attention to the hernia that was there.

'Q. When you get it open, is there hernia—is the hernia something that you can see? A. See and feel. You can put your finger on it.

'Q. Of course, you can tell by the sense of feeling before it is ever opened, but after it is opened up, what is there to see? What do you see and what do you feel? A. You see a bulging, a pouch, a bulging.

'Q. That was there, was it? A. That was there, yes.

'Q. That was something you could see and there was no question about it? A. No question about it.

'Q. Did he call it to your attention? Of course, you were working on the same abdominal wall and did you see it or don't you recall? A. I saw the hernia. . . .

"We have therefore the uncontradicted testimony of the two doctors who operated on the plaintiff and who were in the best position to know the plaintiff's condition; that the plaintiff was suffering from a direct inguinal hernia on the left side which was a serious menace not only to the plaintiff's health, but in the event of strangulation, a danger to his life and the extent of which could be fully discovered only during the operation to the umbilical hernia.

"There seems to be no doubt but that under such circumstances the doctor was not only justified but within his rights in performing the operation on the hernia on the left side.

"No set rule can be laid down with reference to the method to be used by a doctor in operating. When a doctor makes a diagnosis and during an operation is confronted with a situation requiring the exercise of his judgment, especially in a

case of this kind where the doctor first operated on the umbilical hernia and then established the necessity to operate upon the hernia on the left side, he should not be held liable when it is not shown that he improperly exercised his judgment or that he failed to use the ordinary degree of skill. The fact that Dr. G. was not anxious to operate is borne out by his refusal to operate on the right side because he thought it unnecessary at that time and that the condition might clear up without an operation."

The court branded as untrue the plaintiff's claim with respect to the manner and respect in which the consent to the operation was signed. It said:

"In the present case, he made a thorough examination and diagnosis and decided the nature of the operation necessary to aid the patient, who consented in writing thereto. The circumstances surrounding the signing of the consent as well as the physical facts, are strong evidence that the plaintiff was not testifying to the truth in this case. When confronted with his written consent for the operation he testified in effect that he did not know what he was signing; that he was without his glasses and could not read; and that it was signed while he was lying on a stretcher being carried into the operating room; that an orderly held the consent over his head, also holding a board in that position against which board the consent was resting and that he signed the consent with a pen and ink in that manner without reading it and while under the influence of a drug.

"An examination of plaintiff's signature to the consent shows that it is legibly written, exactly on the line provided for signatures, and shows no evidence of having been written under such difficulties, nor any evidence that plaintiff was under the influence of a drug. Anyone who can sign his name as clearly and legibly and on such a straight line as plaintiff did, could not have been under the influence of a drug, and must have been conscious of what he was doing. The writing upon the straight line does not indicate that the plaintiff required glasses to find the line or its location, and would indicate also that the plaintiff must have had his glasses if it be true that he could not see to write without them. Furthermore, the signature was witnessed by Miss J., the reception clerk in the hospital. She testified that she



was at present parish secretary in St J Church and that when this paper was signed she was registrar and admitting officer at B Hospital, that the paper was signed in the admitting office of the hospital on the main floor, and that plaintiff was perfectly conscious at the time, that she never was inside of the operating room and did not know which floor it was on, that the office was on the 'ground floor in the main entrance hall as you come in the door,' and that is where the paper was signed. It is wholly improbable that if the paper had been signed in the place and under the conditions testified to by plaintiff, Miss J's signature would have been on it when her work was wholly confined to the first floor."

The court disposed of the liability of the corporate defendants by reference to the adjudicated cases on the subject under consideration and said

"In *Laubheim v DeKoninglyke Nede Landache Stoomboot Maatschappij* (107 N Y 228), the Court said

"If by law or by choice the defendant was bound to provide a surgeon for its ships, its duty to the passengers was to select a reasonably competent man for that office and it is liable only for a neglect of that duty (*Chapman v Erie R Co*, 55 N Y 579 *McDonald v Hospital 120 Mass 432 Second v St Paul R R Co*, 18 Fed. Rep 221). It is responsible solely for its own negligence and not for that of the surgeon employed. In performing such duty it is bound only to the exercise of reasonable care and diligence and it is not compelled to select and employ the highest skill and longest experience

"Dr G was an experienced surgeon and was shown to be exceptionally able. He had operated many times upon patients for hernia and was constantly in attendance at leading hospitals. When the insured and the insurance carrier employed such a well qualified doctor, their duties ceased. They were not liable for anything that occurred thereafter."

It is a sad commentary on the jury's system that the jury could have given any credence to this unfounded claim, but equally gratifying that the Appellate Division not only reversed a judgment obtained by the plaintiff but did so with an opinion which branded the plaintiff's story as false and untrue. This case illustrates the necessity of a written consent prior to the operation. True it is that the plaintiff sought to circumvent the written consent and succeeded before the jury in so doing, but when the case went to the Appellate

Division this written consent was of great importance and was a vital factor in causing the Appellate Division to reverse the judgment below. Had it simply been a question of the surgeon's word against the patient's there would have been nothing before the Appellate Division to demonstrate, as we were able to do in this case, the falsity of the plaintiff's testimony

### Negligence Claimed in Performing Tonsillectomy

A young man consulted a specialist in nose and throat work regarding the condition of his tonsils. The doctor examined him and found that his tonsils were filled with pus and diseased. He put the man in the operating chair in his office, injected novocaine around the tonsils and with a dissector and a snare removed both tonsils. There was very little bleeding.

The doctor had the patient remain in his office for about nine hours resting from the operation, and then he sent the man home. He gave the patient instructions to notify him in the event that any untoward developments took place and to return in about a week.

The next the doctor heard from the patient was the third night after the operation. Then he got a telephone message that the patient was bleeding. He requested that the patient come to his office, explaining that he could better treat the patient there than at the patient's home. The patient insisted that he could not travel such a distance, and the doctor made arrangements for the patient's family physician to attend him. He later learned that the family physician called at the patient's house and found that the patient had been taken to some other doctor. It was claimed that the doctor to whom the patient was taken found that part of the tonsil on the left side was still present, and that said remaining portion was the cause of the hemorrhage.

The patient instituted a suit against the first doctor charging him with alleged malpractice and, particularly making the charge that the defendant failed to remove the entire tonsils and that a blood vessel was scraped. The case came on for trial and just as it was about to be reached, the plaintiff's attorneys apparently realizing that they were unable to prove a cause of action against the doctor agreed to discontinue the entire matter.

### Plastic Surgery on Nose

A young woman consulted a doctor specializing in nose and throat work and plastic surgery and gave him a history of having five years before undergone a nasal plastic operation. The bridge of her nose was broad and unshapely and she requested the doctor to undertake to correct the said condition. She entered a hospital. The doctor undertook the operation putting her under local anesthesia. He made a transverse incision along and within the nose at the inferior edge of the upper lateral cartilage at the conjunction of the cartilage of the septum. He then elevated the skin and periosteum. He made another incision at the extreme lower end of the pyroformis opening on both sides and freed the periosteum from the bone. The freed portion of bone he bent toward the median line. He applied a lead splint which held the bone in position.

The doctor saw her daily at the hospital for six days and each day he removed the splint, inspected the nose and replaced it and found that her condition was satisfactory.

She made a considerable number of visits to the doctor's office after she left the hospital and when he discharged her, her nose was shapely and showed a marked improvement in appearance, but she complained that it was not as she had anticipated.

She brought a law suit against the doctor in which she claimed that the doctor had entered into an agreement with her whereby he contracted to improve the appearance of the plaintiff's nose without any resulting facial scars or disfigurement. She claimed that the defendant breached his agreement in that he failed to properly change the shape of her nose, and further that he failed to remove a certain scar. Defendant denied that any such agreement had been entered into.

The case came on for trial before a judge sitting without a jury, and at the close of all the testimony, the Court directed a verdict in favor of the defendant thereby finding that the doctor had not breached any agreement entered into with his patient.

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### Treatment of Laceration of Thigh

A boy twelve years old was brought into the office of a general practitioner for treatment with respect to a severe laceration

of the outer aspect of the thigh. The doctor was told that the laceration was received by the boy while he was riding on a sleigh and his leg was torn by a piece of wood. The doctor found a comparatively clean open wound about five inches long, which penetrated all four layers of skin. The doctor searched for foreign bodies and found none and painted the entire area of the wound with iodine, and the skin around the wound with the same substance. The doctor sutured the wound with two interrupted sutures of silkworm gut and then repainted the entire area with iodine and applied a wet dressing. The boy returned the next day and the wound seemed to be in good condition. The doctor again painted the wound with iodine and applied another dressing. On the third day the boy again returned to the doctor's office and there was a slight infection present. The stitches were thereupon opened and the skin was washed off with Dakins' solution and a wet dressing and a bandage applied. The patient was told to keep the wound moist by application of the said solution every three hours. The following day the infection was still present and was treated in like manner. Six days after the original injury the wound was apparently healing very well and wet dressings were discontinued. No more pus was present and dry dressings were applied after the wound had been painted with a weak solution of iodine. The patient was told to return for further treatment, but the doctor never saw him again.

A malpractice action was instituted against the doctor in which it was claimed on behalf of the infant plaintiff that the defendant doctor had failed to properly treat the injury to the plaintiff's leg in that he permitted foreign substances and dirt to remain in the wound and caused the child to suffer from blood poisoning. It was further claimed that as a result of the defendant's negligence that the child had partially lost the power of locomotion in the leg. The case was reached for trial and was directed to proceed to trial in one of the trial terms as a jury case, but instead of proceeding with the trial of the action the plaintiff's attorney being unable to convince the defendant's counsel that there was any merit to the action consented to discontinue the same, apparently knowing that he had no case against the doctor.

## PHYSICAL THERAPY IN A HEALTH RESORT

WALTER S. McCLELLAN, M.D.

*From the Medical Department of the State Reservation, Saratoga Springs*

When one considers physical therapy in a health resort, one finds two striking differences from the usual practice. First, hydrotherapy forms the keystone of the work, and second, the opportunity to build up a desire for health by attention to both the physical comfort and the mental relaxation, is to be emphasized.

During the season of 1933, there were given at the State reservation baths, 109,429 treatments. The distribution of these treatments is presented in Table I.

TABLE I—NATURE OF TREATMENTS GIVEN AT THE STATE RESERVATION BATHS, SARATOGA SPRINGS, 1933

1 Mineral water baths	89 456
2 Massage (general and local)	7 732
3 Eliminating treatments (electric cabinet salt rub and douches)	7 137
4 Colonic irrigations	2 602
5 Local heat treatments (infra red or hot pack)	1 749
6 Miscellaneous	753
Total	109 429

The natural carbonated mineral water bath which makes up the large proportion of our work is prepared from the water of the Lincoln springs. In Chart I is presented a graphic picture of the constituents found in the Saratoga waters.

In using the natural carbonated mineral water for balneotherapy, there are certain controllable factors which may be varied to produce different effects in a course of treatment. Usually the temperature is kept near the indifferent point of 92° to 95° F. In the treatment of circulatory disorders and nervous conditions where a toning-up process is desired, the temperature may be lowered gradually to 86° or 88° F. If the purpose of the treatment is the application of heat, as in many forms of rheumatic conditions associated with pain, the temperature of the baths may be increased to 98° or 100° F. The temperature must be regulated for each individual case as is found suitable in his particular condition. The duration is generally 8 to

15 minutes, starting with the shorter time in the bath and gradually increasing to a longer interval. In some patients this period may be extended to 20 minutes in order to produce relaxation and relief from pain. The frequency of the baths depends again on the condition of the patient and they are usually given four or five times a week for a period of about four weeks. In giving the treatments, an experienced attendant prepares the bath according to the prescription, and observes the reaction of the patient. In general, the rest period of one half to one hour follows the bath. In addition, many patients are directed to return to their room and rest there for another hour.

A canvass of 1,000 patients was made during the past season to determine, if possible, what physical disorders were present in the patients who came to Saratoga for treatment. A registration card was prepared so that the complaints of the patients interviewed could be recorded. These cards were filled out by the house physicians during an interview with the patient and when the history was not clear-cut, a physical examination was made.

A summary of the information obtained from this canvass is presented in Table II.

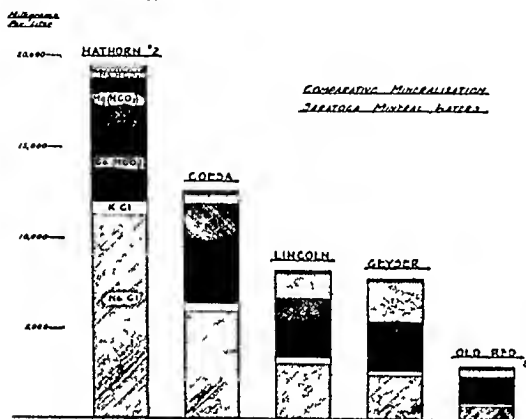
TABLE II

Primary Complaint	No of patients
1 Heart and circulatory disorders	293
2 Rheumatic conditions	267
3 Functional nervous disorders	130
4 Gastro intestinal conditions	128
5 Metabolic diseases	26
6 Miscellaneous diseases	57
7 No disease	99
Total	1 000

Among the factors which account for this distribution are (1) the stress which has been placed on the importance and value of the natural carbonated mineral water bath in the treatment of circulatory disorders, (2) the desire of the arthritic patient to seek every possible aid in at-

tempting to relieve his condition; (3) the lack of a well-organized program of treatment for these chronic diseases; and (4) the desire to keep well as evidenced by the number who come for general tonic treatment who have no definite physical ailment.

With the information presented in this survey, it is necessary to consider the nature and type of physical therapeutic procedures which are of value in each of these groups as well as to determine the indications and contra-indications in relation to the application of the special type of treatment available in the particular health resort.



#### HEART AND CIRCULATORY DISORDERS

Attention has been drawn to the importance of physical therapeutic results in the treatment of cardiac conditions. Groedel<sup>1</sup> reviewed the information on this subject in his book which deals particularly with the indications and importance of the carbonated mineral water bath in circulatory disorders. More recently the author<sup>3</sup> has summarized the information available regarding the influence of the natural carbonated mineral water bath on the physiology and clinical picture in circulatory disorders. A series of natural mineral water baths, properly prescribed, produces definite and beneficial changes in the physiological activity of the circulatory system. During the course of the bath a definite hyperemia appears, showing that there is a very marked filling of the capillaries of the skin. This is associated with an increased minute volume output of the heart, usually a slight reduction in pulse rate, and consequently more efficient action of the heart itself. In many patients who suffer with stenocardial pain, relief may be experienced during and after the series of baths. The influence of the baths on the blood pressure is variable, depending entirely on the etiological background

for the blood pressure. In patients where a nervous factor plays a distinct part in the elevation of the blood pressure, definite and sustained reductions of the pressure result from this type of treatment.

In association with the use of the mineral water bath, properly regulated exercise, preferably an active form, such as walking, not too strenuous golf, and the like, play an important part in building up reserve. The use of general massage and of various types of mechanical exercising apparatus have their place in keeping up the general physical condition of the patient, even though the cardiac condition will not permit vigorous active exercise.

Treatment of this nature in a health resort seems particularly beneficial in patients with moderately diminished myocardial reserve, mild angina pectoris, and functional cardiac disorders. It is obvious to the thoughtful physician that he can expect to make no change in the damaged valve in rheumatic heart disease or in the sclerosed vessels of advanced coronary disease. In these conditions, benefit may be obtained by improvement in the functional activity of the heart muscle. Observation of patients in the health resort where natural carbonated mineral waters are found indicates that patients with advanced decompensation, severe luetic heart disease, marked cardiac asthma, or any patient with acute endocarditis or pericarditis with fever should not be sent to the health resort. In other words, any patient who requires bed care can best be treated at home, and when the cardiac condition improves, he may be sent to the health resort for a course of treatment.

#### RHEUMATIC CONDITIONS

It is probable that this group has received the most attention from the standpoint of treatment with different forms of physical therapy. Diseases of joints, conditions affecting the nerves or muscles, in fact, any painful conditions associated with the system of locomotion have been included in this group. It is not the author's purpose to subdivide this group more specifically, but to consider the place of physical therapy in this large group of patients.

Recently Lautman<sup>2</sup> has discussed the place of hydrotherapy in arthritis. He points out that hydrotherapy produces the beneficial effect by its thermal influences resulting in vasodilatation, relief of pain, elevation of temperature, sweating, and diuresis, and by its physical properties

which permit the supportive treatment of affected joints in general, or allow the counter-irritative effect to be produced in the form of sprays and douches. It is evident that the beneficial influence of physical therapy whether applied in the form of hydrotherapy or local heat application as packs, infra-red light, or diathermy will produce its beneficial effect either by improved elimination or by a better circulation, local and general, or by both. The physician must realize that, with the inactivity associated with the painful condition either in nerve, muscle, or joint, the patient becomes less active and in severe cases quickly takes to his bed with the result that both elimination and circulation, which depend in a large measure on the activity of the individual, are seriously impaired.

One great object in the treatment of these conditions is the relief of pain, as that is a very prominent factor in many of them. As the pain is relieved, then attention is turned to improving the function of the damaged part so that it may take up its normal activity again. Toward this goal, namely, the relief of pain, local applications of heat have been used for generations. Reference is made here to the more or less chronic conditions because it has been shown in acute exudative disturbances of joint or bursa that cold is more beneficial than heat because the latter tends to increase the amount of exudation and thus may definitely aggravate the pain. However, by far the largest majority of patients in this group who come to the health resort for treatment are of the chronic type so various measures for the local application of heat are used extensively. These include the hot mineral water pack, radiant-heat cabinets, infra-red lamp, and others.

In a health resort it is customary to combine this form of local treatment with a general program of baths or some form of eliminating treatment. If the patient who is suffering from this disorder is obese and full-blooded, then the eliminating treatment consisting of electric cabinet, salt rub, and douches produces beneficial results. This treatment in combination with properly regulated diet aids in the reduction of weight with the consequent mechanical relief of affected joints. In the wasted, anemic, debilitated individual, such as is found not infrequently with rheumatoid arthritis, the general treatment must be applied with great care. Here the warmer mineral water baths seem to exert a definite

beneficial effect, particularly when associated with some form of local treatment following. It must be stressed at this point that the use of any physical measure in a health resort or in any other place should be correlated with a general treatment of the patient as a whole and properly graduated to fit the patient's tolerance. It accomplishes no very beneficial result to apply diathermy to a local painful joint and pay no attention to the severe secondary anemia which so frequently is associated with rheumatoid arthritis. This fact has been very aptly stressed by Minot<sup>5</sup> in his presidential address before the American Clinical and Climatological Association. He states that the physician who directs the treatment of a patient with arthritis must consider the proper balance between rest, exercise, diet, removal of infection, drug and vaccine therapy, and physical measures. He considers that by far the best results are obtained when attention is given in detail to all angles of the program and he concludes that to teach the art of courageous living is often the chief prescription for the patient with chronic arthritis.

Earlier in this section, the statement has been made that the beneficial results obtained in this group of patients seem to depend in a large measure on improved elimination and improved circulation. The use of the treatments available in a health resort are of distinct aid to elimination. The internal use of the different mineral waters directly results in better elimination through the intestinal tract and kidney. The proper application of the mineral water bath, with its resulting peripheral hyperemia and the general eliminating treatment with its marked sweating definitely improve elimination through the skin. In the use of the mineral water bath with its beneficial influence on the general circulation and in the local application of some form of heat therapy which produces its beneficial effect through improving local circulation about the affected joint, we have a combination which gives us the possibility of definite improvement in the circulation of these patients.

#### FUNCTIONAL NERVOUS DISORDERS

In this large group of conditions which may be primary or associated with some other physical ailment, the opportunity of treatment in a health resort with the proper atmosphere for mental relaxation is very great. No effort is made to treat patients with definite psychosis. In the treatment



patients visiting a health resort. The mere fact that they are away on vacation gives them a certain sense of freedom and they may violate the carefully laid out program of their home physician, possibly in taking more exercise than their circulatory condition may justify, possibly indulging more liberally in food than is good for their condition, and in other ways. Many patients come requesting treatment who object to the medical examination which is recommended in connection with a course of treatment in a health resort.

These problems are being considered in formulating the general medical policy at Saratoga. With proper instruction, the patients will recognize the importance of medical regulation in order to obtain the best results from their treatments.

The home physician may aid very materially in meeting these problems. When he refers a patient to the health resort, he may advise him that it is important to be under proper medical control and he may send a resumé of the patient's record for the physician in the health resort. In return, the physician at the resort shall send to the home physician a report of the treatment. Then if the home physician will send a review of subsequent examinations throughout the year to the physician in the resort, the latter can much better evaluate the result of the spa treatment.

#### CONCLUSION

It has, of course, in this short time been possible to present only a brief survey of physical therapy in a health resort. The author has attempted to stress the importance of such treatment in the care of chronic conditions which affect various systems of the body, as well as the great value of a periodic course of treatment under proper conditions for healthy people. Stress should be laid on the point that treatment of this nature must be considered only in association with other forms of treatment suitable to the condition. Recognition by many physicians in this country of the importance of physical measures in the care and treatment of chronic conditions in the public health program, has been slow.

The success of the health resort in filling a need in this country depends in large measure on the recognition that this form of treatment may accomplish favorable results in certain chronic diseases. In the last analysis, the result of any medical program is judged by whether or not the

patient is relieved of the conditions for which he seeks treatment.

In dealing with the various chronic conditions which have been discussed in this paper, it is needless to say that in many of them a return to complete health is impossible, but, if a program as has been outlined above can contribute to the relief of the condition, making life more worth living for the patient afflicted, then it will have justified its existence beyond measure.

DR. JOHN DEP. CURRANCE. I am particularly anxious to stress Dr. McClellan's point that all of these resort patients should be under proper medical supervision throughout the course of their treatment. It is regrettable that so many physicians have observed poor results in patients who had gone to one of our American spas and undergone a course of treatment without such medical advice and control. Hydrotherapy is a powerful therapeutic weapon capable of producing effects from a single treatment more spectacular than the action of most drugs which physicians employ. It is capable of producing great benefits but it is also capable of producing detrimental effects. To allow patients to take a course of hydrotherapeutic treatments without proper medical supervision is in my opinion, comparable to counter prescribing at a drug store. It is the duty of those men who are using hydrotherapy to do more research in this field, to educate physicians who are not acquainted with the physiologic effect of various forms of hydrotherapy with them and to form a conclusive battery of laboratory data which will scientifically prove the value of hydrotherapy in the various conditions in which it is employed.

The health resort has barely scratched the surface in the field of the rheumatic affections. The patient suffering from tuberculosis has been educated to realize that he should expect to be placed in a tuberculosis sanatorium for a period of months or even years. The patient with chronic arthritis should be educated to realize that the health resort which can help him so much in a short period of 3 or 4 weeks could do a great deal more if persistent effort were made in his behalf. The chronic arthritic should be made to realize also that, although hydrotherapy is one of the most valuable agents in arthritic treatment unless he is under proper medical control where hydrotherapy is not the sole therapeutic agent employed the results expected will usually be unsatisfactory.

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## THE PERSONALITY MAKE-UP OF THE CRIMINAL

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The highly publicized criminal and his fictional counterpart of the screen and magazine have done much to throw a romantic aura about the subject of crime. The activities of the Dillinger type and the former power of Al Capone have aroused in many instances the imagination of the casual observers of the criminal scene. Such an observer is inclined to adopt one of two mental attitudes, either of which is an identification of the criminal with himself. Through the activities of the notorious criminal, he may receive vicariously those thrills he does not find in his own humdrum life. Or he may derive a certain amount of the satisfaction of self-castigation through the enjoyment of the severe punishment of the offender. Consequently any estimate of the make-up of the personality of the criminal must take into account the concept of the average man of the street on the subject. It is one of the major purposes of the present paper to indicate the fallacy of dealing with the problem of crime through any attitude of sentimentality toward the criminal or a craving for his severe punishment. Enlightened penologists and psychiatrists are gradually coming to the viewpoint of the adoption of a middle course which recognizes the criminal to be a man very much like the average man of the community but hampered with certain handicaps, mental, physical, and social that tend to push him over the borderline between social and antisocial conduct.

In an analysis of the criminal make up it will be advantageous to dispose of certain types of offenders with a brief discussion only. Two types are obviously irresponsible and therefore cannot be held accountable for their misdeeds. I refer to the insane and to the feeble-minded criminals, respectively.

CASE 1.—L.Z., a female of foreign birth, developed a strong attachment to her landlord and annoyed him constantly by her attentions. His friend advised that she be brought before a magistrate who warned her and dismissed the case. Her attention next turned to the friend for whom she developed an intense hatred. This was fanned by her observing him walk past the house coming and going from work. She next waylaid him on the street calling him obscene names using threatening gestures toward him. Finally

she shot him twice with almost fatal results. She was adjudged insane by the court and remanded to the State Hospital to await the return of sanity so she could be put on trial. In the hospital her manner was abusive, and she wrote threatening letters to public officials for not securing her release. She exhibited well-developed ideas of persecution, such that she was being held and tortured in the hospital at the request of the officials. Was untidy. Wrote in an incoherent manner and at times her speech disconnected.

Diagnosis: Psychosis—paranoid condition.

CASE 2.—G.C., a white male, aged 19 years, broke into a store and stole 7 bottles of beer. Psychological tests showed he had a mental level of 8 years and an I.Q. of 53. Rather nervous as a child. Teething, walking, and talking accomplished very late. He began to drink at the age of 17 years, and associated with bad company. A negligible school record and unable to hold down a job. Very easily led, and it was this factor that got him into trouble.

Diagnosis: Feeble-minded. Delinquent — Transferred to the institution at Napanoch.

The point to be noted in reference to the insane criminal is that with a slightly different set of factors present at the time of his act, he may never have committed a crime but would have been sent to a civil hospital for the insane. By the same token many inmates of civil State hospitals at the time they were committed for asocial conduct of some kind, might easily have become criminal had the circumstances been just right.

The feeble-minded delinquent differs from the prison type of offender, in being feeble-minded, more highly suggestible, more timid, oversensitive, and seclusive. He is given to the less vicious type of offenses if we except crimes of incest, rape, and arson. He shows poor memory, a lack of an adequate fund of general knowledge, less ability to concentrate on given tasks and to form associations when concentrating. His muscular movements are awkward and incoordinated, and therefore he has to seek unskilled jobs in rural communities. All feeble-minded criminals do not perform criminal acts because of their feeble-mindedness. Mental deficiency is likely to become a factor in the criminal act only when the degree of intelligence is quite low or there is unusual susceptibility to suggestion.

Another type of offender can be dismissed briefly as not belonging to the pres-



ent discussion, namely, the accidental or casual offender.

CASE 3.—M.T., white, male, a contractor and builder and holding public office with 40 years of respectable standing in his community, appropriated nearly ten thousand dollars in small amounts from the public funds. He had been experiencing financial difficulties during the period of depression and was put to it to meet the demands of creditors.

CASE 4.—In Washington, D. C., a World War veteran shot and killed his wife and turned the gun upon himself. A button deflected the course of the bullet so he suffered only a slight arm injury. The wife was 22 years of age and her husband 43. She had been estranged from him for several months and had been running a boarding house. On the afternoon of the shooting he called at the house to try to get his wife to return to him. She refused and he shot her. She wanted diversion and lively times which he did not care for nor could afford. This has been his only arrest.

CASE 5.—J.R., white, male, Italian, age 25. Became infuriated because his landlord advised his wife to have him arrested following an argument over a bag of flour. In revenge, he tossed a lighted cigarette into a pile of waste paper in the basement and set the house on fire. No previous arrests have been recorded.

In these cases the crime is an isolated event in the life of the individual. It often arises suddenly as an outburst of passion or through desperation over trying to raise money on a margin call to save securities. Some abnormal element enters into the situation, but the individual has never offended previously nor is he likely to offend again.

With the dismissal of the casual offender and the irresponsible criminal from our discussion we can refer now to the high class criminal operators who seldom come into contact with the law. One of the greatest fallacies made by many criminologists is the assumption of the premise that prison and jail records tell the story of crime. What shall we say of the blackmailers, gamblers, swindlers, fraudulent dealers, and those operating just within the law and seldom apprehended? We have little knowledge of these as individual types nor of the extent of their depredations. Criminal statistics are highly vitiated as documents of fact on the crime situation because of lack of facts on the group of criminals making the largest hauls. One makes the . . . . . this group as a w . . . . . largely by the craving for money and power. Poverty, compulsions, desperate circumstances, disordered mentality, and the host of factors to be noted in the lives of other

criminal types have no bearing here. This type of crime is a simple business proposition undertaken by men who are for the most part normal, shrewd and calculating individuals, often operating as a well-organized group.

A large share of the population of prisons, however, is composed of normal individuals with a somewhat different interpretation of "normality." They cannot be called insane, neurotic, nor psychopathic. The accidental and casual offender has already been mentioned. The present reference, however, is to the type that gets into trouble readily and frequently, yet one that seems to have a degree of common sense and apparently no mental abnormalities. The first subtype of this group to be discussed is the show-off. To this group belong the stick-up men, hijackers, bank robbers, and gang leaders. Such a felon is egotistical to the point that a reputation among his kind is to be sought even to the sacrifice of his own life. The criminal recently executed at Sing Sing Prison and known as Two-Gun Crowley found complete satisfaction in the front page publicity attendant upon his standing off by gun fire, for a brief period, a large detachment of New York City police. His place was assured in the minds of the underworld. He spent his last days before execution with a good deal of cheerfulness. In an exaggerated form the aggressiveness of this subgroup is seen in the bold, hazardous, and often reckless maneuver of the Dillinger type. More often, however, the type lacks aggressiveness and real leadership and relies on self-assurance and confidence to meet the situations that arise. To this group belong the confidence men, the swindler, the fraudulent impersonator, and bucket shop operator. This criminal type often possesses a bumptious presumption that he is a bit "slicker" than his fellow men.

CASE 6.—H.L., white, male, age 24. Was arrested by the State Police following a minor automobile accident. On questioning the man, the trooper noticed his resemblance to a bogus check passer wanted in several cities. He was placed under arrest, and further investigation of his past history showed that he had been in the habit of impersonating the sons of nationally known men, such as Booth Tarkington, Jr., Franklin D. Roosevelt, Jr., and others. His assurance and suavity had enabled him to pass the checks without any difficulty, but it was a minor offense of another nature that brought him to justice.

Almost without exception the show-off

group has an overweening vanity that leads to boastfulness when the cue should be silence, and extravagance in expenditure and conduct to impress associates he is a "big shot." It has been said that Gerald Chapman, the million dollar mail robber, would each night regularly take a \$1,000 bond, cash it, and spend the proceeds on Broadway. The psychiatric mechanism back of the show-off type is overcompensation for a sense of inferiority.

A second subgroup to the so-called normals in prisons is the inadequate personality type. Such offenders have a firm and lasting aversion to steady employment, although they may work on a criminal job feverishly for 48 hours at a stretch. As an individual he is unable to stand the monotonous grind of office or mill routine. He would rather live from day to day with no thought of the future other than the desire for the occasional opportunity of extravagant expenditure attendant upon some criminal act. Usually there is an intense selfishness that recognizes the feelings of no one but himself. His every activity is directed toward satisfying his needs alone. A lack of the sense of honor is common with this type. He is loyal to his fellow criminals only through the fear of gang reprisals. There is not a police system in the world that does not take full advantage of this fact, for it could not operate with complete efficiency without the use of the "stool pigeon."

Somewhat less of a menace but more numerous than the foregoing inadequate types is a certain class of misdemeanor wanderers. The incidence of psychopathy usually of a paranoid nature and the tendency to drug and to alcohol addiction run high in this group. Their main characteristic, however, is pronounced inadequacy. The men drift from place to place over the entire country, usually as hoboos, but often as itinerant workmen. Mechanics and other craftsmen of a sort, they obtain work fairly easily wherever they go, but they quit the job on the first opportunity. Usually the desire to see new cities or any other trivial excuse gives them the urge to move on. There are times, however, when they run short of cash and cannot find employment. At such times they turn to petty thievery.

CASE 7.—White, male, age 32 years. Born and raised in Corning, New York. Became an expert glass blower in the Corning Glass Works. Never married, but spent much of his

time in speakeasies and pool halls. Was discharged because he was irregular in coming to work and had to be sent home several times because intoxicated on the job. Made one or two ineffectual attempts to secure employment elsewhere, then began to beg. Became a professional beggar often averaging as much as \$60 a week. When one city would be worked out for him, he would drift to another. Has been picked up for begging in most of the principal cities of the country.

The chief psychiatric mechanism in effect in this group of inadequates is the inferiority feeling which is neither overcompensated nor projected. The affective tone is frequently depressive. Schizoid types are quite prevalent among the inadequates. Delusional trends if existent are usually paranoid in character but are poorly organized. The incidence of homosexuality is relatively high.

Closely allied to the inadequate personality group are certain immature types. They cannot be classed as feeble-minded, but their intelligence is definitely retarded. Their affective life also bears distinct evidence of lack of maturity. On the physical side endocrine disorders, especially of the dysplastic type, are frequent. Fröhlich's syndrome (dystrophia adiposogenitalis) is encountered more frequently than in the general civilian population. Disturbances of the functions of the thyroid and pituitary glands are definitely above the average incidence. These immatures are referred to the prison hospitals for treatment of physical disorders more frequently than other types of inmates. Defective teeth, diseased tonsils, strabismus, anemias, and poor general physical condition are common to the group.

In recapitulation it will be noted that we have now treated the so-called normal group and its various subtypes, and the legally irresponsible groups comprising the insane and the feeble-minded. The last remaining group to be discussed is the psychopath. So much has been written on the subject of the abnormality of the criminal, that there is a tendency on the part of the laity to consider all criminals to be psychopathic. As a matter of fact, the obviously psychopathic group in prison population does not run much above 25 per cent. A survey of the New York Prison population made in 1930 places the figure at 29.5 per cent. Considerable confusion exists in the minds even of professional workers as to what constitutes a

psychopathic individual. For the purpose of the proper discussion of subtypes under this grouping, it is advisable at this point to define the psychopath in nonpsychiatric terminology. The psychopath is that individual who throughout life has had great difficulty in bringing his desires and conduct into a harmonious relationship with the demands of other individuals and of society upon him, and is subject thereby to more or less regularly recurring behavior incidents that may be considered asocial but are selfishly disregarded by the psychopathic as incurring no responsibility upon himself. Briefly, he refuses to belong and hasn't the slightest concern he is not one of us. The personality in the psychopathic group is fairly well integrated. Distinction is made between this group and those deeper mental conflicts known as the neuroses.

Foremost among the psychopaths is the emotionally unstable individual. A large proportion of the assault and homicide cases belongs to this category. Often the viciousness of the attack is entirely out of proportion to the cause that incited it.

**CASE 8.**—Several white men had been drinking heavily in a speakeasy in a Long Island town. One suggested going to a house of ill repute containing colored women in an isolated rural section several miles distant. Upon arrival they were met by the intoxicated negro proprietor who approached the car and tried to get the men to drive away. Finally, he lost his temper, obtained a shot gun from the house, shot one of the men, dragged his body out of the car and clubbed his head into a pulp. Crimes committed under the influence of liquor tend to be unusually brutal.

A frequent explanation of assault cases is to be found in familial relationships in which some boy in the family group develops an intense hatred toward his father or older brother.

**CASE 9.**—Several months ago there was released from the Institution for Defective Delinquents at Napanoch, a man who had acquired some distinction in his time as a first-class pugilist. He had fought Lew Tendler, Benny Leonard, and other important figures of the ring. The condition known as "punch drunkenness" developed and he had to give up fighting as a means of living. His generally stupid appearance and retarded intelligence as the result of the beatings he had received, prevented him from obtaining any skilled work. He took to holding up people and seemed to derive a great deal of satisfaction out of beating them up as well as robbing them. His history shows that he was raised in a small upstate New York town. His father was a heavy drinker and had the habit of beating his wife and the boy. Hatred was engendered in the boy, but he couldn't whip his father. As a relief he began beating up all

the boys in the neighborhood. One morning a local fight promoter happened to pass by when the boy was engaged in one of his street brawls. The promoter was impressed and easily persuaded the boy to enter the ring as a preliminary fighter to the main bout. His career was speedily launched. It afforded a means for taking out on others the blows he had received from his father. The matter goes a little deeper than this, of course, because the real psychological explanation is to be found in the strong attachment of the boy for his mother, the rivalry with his father, and the loss of the love object through violence.

The projection mechanism noted in this case is especially common in homicide cases. Murder usually falls into one of two categories. It may be an accidental affair or incidental to some other crime. A driver runs over a pedestrian, a man kills in self-defense or in the process of a hold-up, the robbers may be surprised and be forced to shoot. Responsibility for the act is there, of course, but premeditation is not clearly indicated. The other type of murder shows a distinct premeditation to kill. The victim in many of these cases, especially if the crime has been perpetrated with unusual brutality, becomes a surrogate for the father of the murderer. The true explanation therefore of the viciousness of the crime is to be found in a study of early family relationships.

Emotional instability may express itself in many ways other than through assaultiveness. The hypomanic activity of certain aggressive types of criminals has already been mentioned. The so-called "prison psychosis," which is merely a simple depression, is occasionally encountered among the emotionally unstable offenders. The most frequent method of its expression in the criminal group, however, is in emotional episodes lasting from a few hours to three or four weeks. Many criminals become highly irritable and assaultive during these upsets and may keep everyone awake by pounding on the cell doors and shouting and cursing throughout the night. Segregation is usually required. Hallucinations are rather rare during these upsets, but strong paranoid ideas are the rule. It is not rare for attempts at suicide to be made. Such episodes can be classified as being closely allied to the manic-depressive group of mental disorders, but commitment to a State Hospital is seldom necessary and the inmate appears to be entirely normal between attacks. Attacks may occur only once or twice a year, but there is a decided "rhythmically recurring" element present.

The schizoid types deserve to be listed as a subgroup of the main classification of psychopaths. The splitting off of the personality characteristic of this group accomplishes a twofold result that handicaps the individual from successful adjustment in the community. The split-off portion becomes organized into a constellation, usually paranoid in character, that may lead to definitely antisocial conduct, and the original portion of the personality becomes impoverished thereby and to a degree inadequate to meet the demands of everyday life. Schizoid reactions are common, of course, in noncriminal groups, but if other factors are operating to push an individual over the line between right and wrong, the splitting of the personality is a great help.

Lack of time prevents any discussion other than reference to most interesting psychopathological states encountered in certain types of criminals. Prominent among these are acts with unconscious motivations usually compulsive in nature such as exhibitionism, rape, and some types of theft. The early history in such cases commonly reveals frustrations in childhood that are highly emotionalized and frequently take on a sexual coloring. Thus the theft may represent a love object of which the offender was deprived in early childhood. Deserving of mention are cer-

tain types of epilepsy or its equivalents, especially when the criminal act has been perpetrated during a state of amnesia or manic furore. The escape mechanisms involved in drug and alcohol addiction are worthy of notice. Anxiety states are frequent factors in antisocial conduct. The criminal act is an expression of repressed material arising from mental conflict. In the criminal type repressions are more likely to take the form of overt acts than fantasy formation. In other types of criminal psychopathology, however, especially where schizoid trends are present, the entire personality becomes involved in the antisocial conduct, and free fantasy formation occurs. Such individuals are relatively common in the community but seldom come to the notice of the police because the fantasy formation tends to nullify action. When an overt act is performed by such an individual, however, it tends to be bizarre and atrocious. The Leopold-Loeb affair is a case in point.

In conclusion, may I call attention to the fact that no attempt has been made in this paper to offer any suggestions as to treatment of the criminal nor prevention for crime. The prime object has been to indicate a few of the many types of antisocial conduct with brief reference to underlying causations.

### A TRIP TO THE WOODSHED

The vices of modern youth are blamed by some on the neglect of what Professor William James called "Dr. Spankster's Medicine." It is a fact, anyway, that the boys smoked fewer cigarettes in the days when the fathers used to march them out to the woodshed now and then. "Willie," said father, "if you saved the money you spend for cigarettes, you could pay for a college education." A similar kindly spirit breathes through an editorial in the bulletin of one of our County Medical Societies out East New York way. "Are you a member of your County Medical Society?" it asks. "Its dues are not prohibitive. Eight cents a day could readily be spared by the average physician. The cost of one pack of cigarettes a day will cover your dues for that day, and at the end of the year you will have some money left over."

If you are a member, the writer continues, are you attending meetings and are you getting on the floor to voice your sentiments about the various matters under discussion? Or are you one of those who prefer to let others do the "dirty work" while you are playing bridge, and subsequently sulk because things are not done the way you would like to have them done.

You are a doctor and people come to you to help them with their problems. At the

present moment you are confronted with serious problems. Face them and try to solve them. You cannot do that alone. You must join the group. If you fail to join us and work with us, the lot of medical men will be as bad as that of the decent and honorable Germans under Hitlerism. The County Medical Society is offering you the opportunity to use the well established machinery to express yourself and to fight for your rights and privileges. Become an active worker in the Society. Your word is as good as that of its President. Do not sulk; do not day dream; do not complain in the staff room of your hospitals; it will get you nowhere. If you do not like the way things are done in the Society, come down to its meetings, offer constructive criticism, and help to better things. Take interest in your County Medical Society. Attend its meetings and participate in its activities, and you will be a man and a doctor rather than a slave or servant to some politician.

The Director of the new Institute of Experimental Medicine, to be constructed in Moscow, is Professor Fedoroff. The staff will number 3,500 persons, including scientists in medicine and all allied sciences, engineers, hospital personnel, and unskilled workers.

# THE CONTINUOUS INTRAVENOUS METHOD OF FLUID ADMINISTRATION (VENOCLYSIS) IN PEDIATRICS

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In 1831 Latta<sup>1</sup> first injected large quantities of saline solution intravenously into adult patients suffering with cholera. The idea occurred to him after reading O'Shaunessey's<sup>2</sup> report in which he called attention to the loss of water and salt from the blood of patients suffering from this condition, and suggested replacement therapy. Latta, like O'Shaunessey, felt that blood dilution and replenishment of water and salt were necessary and that he could best accomplish these by intravenous saline injections. His results were good, but often were inadequate because of the return of the collapsed state a few hours after the injection was given. Evident as it was that continuous intravenous injection of fluid was indicated, this procedure did not come into use until sixty-five years later, in 1896, when Cox<sup>3</sup> recommended it in the treatment of cholera.

In 1910, Thompson,<sup>4</sup> one of Cox's associates, reported his experience with continuous intravenous therapy in cholera for the period between 1896 and 1910. Soon thereafter this procedure was recommended for other conditions by Friedmann,<sup>5</sup> Matas,<sup>6</sup> and others. They and Woodyatt,<sup>7</sup> Hendon,<sup>8</sup> Titus,<sup>9</sup> Hirshfeld,<sup>10</sup> Hyman, and others reported their extensive experience in the laboratory and clinically in the treatment of conditions such as surgical shock, intestinal obstruction, circulatory collapse, and eclampsia. Hendon has suggested that the procedure be called "venoclysis," and Friedmann referred to it as "Dauertropfinfusion."

Except for the application of venoclysis to the treatment of toxicosis in 1929 (reported by Karelitz<sup>11</sup> in 1931) and for our report<sup>12</sup> of its successful application to other conditions, the literature reveals only the brief report of its application by Harris and Stoddard<sup>13</sup> in 1928. There also appear Brush's<sup>14</sup> description of a new apparatus for venoclysis (1931), more recently a confirmation of our results in alimentary toxicosis by Cohen, Miller, and Kramer,<sup>15</sup> and the successful treatment with venoclysis of a case of accidentally induced hyperparathyroidism by Lowenburg.<sup>16</sup>

A discussion of alimentary toxicosis will best illustrate the application of venoclysis

to pediatric conditions since it is probably the best example of what Atschley<sup>1</sup> has called medical shock, and except for its etiology, it is clinically and chemicopathologically almost identical with Asiatic cholera.

In the treatment of alimentary toxicosis, before realimentation can be attempted, the shock-like state must be overcome, and as in cholera, the circulation must be improved, urinary secretion must be increased to enable the body to excrete its retained toxins and excess of acid substances, and tissue salt and fluid must be replenished.

To accomplish these, we felt that the continuous intravenous drip of 5 per cent glucose in normal saline or Ringer's solution might be effective. At first 100 to 250 c.c. was injected rapidly in 20 to 30 minutes, after which the flow was reduced to the rate of 100 to 200 c.c., averaging 130 c.c. per kilogram of body weight per 24 hours. This was supplemented by a blood transfusion usually given within a few hours after the venoclysis was started. The venoclysis was continued until the improvement sought was obtained, and until the child was able to take about  $\frac{3}{4}$  to  $\frac{3}{4}$  of its fluid requirement per ounce without ill effect on the gastro-intestinal condition. The above procedure plus a period of milk starvation for at least 36 hours and in some cases as long as 5 days, plus realimentation by frequent small feedings according to a simple milk formula increased daily for 4 to 5 days and thereafter as indicated, was carried out in over 100 cases of alimentary toxicosis.

## RESULT IN TREATMENT OF ALIMENTARY TOXICOSIS

When 100 to 250 c.c. of the fluid was injected rapidly, or soon thereafter, the circulation improved as evidenced in the quality of the pulse, the elevation of the blood pressure, and the better color of the skin. The respirations changed from the hyperpnea to more normal breathing; the expression of the eyes became brighter and clearer. Restful sleep usually ensued. The improvement seemed better sustained after the blood transfusion. Diuresis became evident either promptly or within a few

hours, vomiting ceased, thirst was created almost immediately, and the diarrhea was either promptly stopped, diminished, or gradually improved. The blood dilution occurred within the first few hours of treatment as was noted by the drop in the hemoglobin and in the reduced serum protein. The azotemia usually cleared within 24 hours and the acidosis improved progressively. These infants drank water eagerly and did the same when the milk was started. The initial rise in blood pressure was temporary in some cases, but as the fluid administration continued the improvement became permanent.

The period of venoclysis varied from 9 to 256 consecutive hours, usually 36 to 72 hours. When the venoclysis was continued for longer than 36 to 48 hours, in some cases visible edema became manifest. Although this was usually not associated with ill effects, nevertheless it was coincident with a marked drop in serum proteins and was therefore a signal for the discontinuation of the venoclysis. In some instances where continuance of the venoclysis seemed necessary, a 15 per cent hypertonic glucose solution was injected to increase the urinary output, or an additional transfusion was given to increase the blood serum protein, and thereby temporarily reduce the edema. The visible edema usually cleared up spontaneously in 1 to 3 days after venoclysis was discontinued. Some of the injected fluid was retained longer as was indicated by the weight of these children.

The more marantic the infant, the lower was the drop in the serum protein and the more rapidly developed the edema. The edema occurred regardless of whether normal saline or Ringer's solution, plus 5 per cent added glucose, was used. The fluid retention was less marked, however, when 5 per cent glucose in distilled water was injected.

Few cases which came to postmortem examination revealed considerable fluid in the peritoneal cavity and edema of the tissues including the brain. In fact, one child who had received a total of 500 c.c. of fluid in the 24-hour period preceding its exitus, at postmortem examination had about 500 c.c. of fluid in the peritoneal cavity besides some edema of the viscera. Apparently the tendency to edema exists in cases of toxicosis even before therapy is started. The McLure-Aldrich<sup>18</sup> test emphasizes this by the rapid absorption time in many of these cases before treat-

ment is started. Furthermore these infants which came to postmortem examination were the most severe cases and those usually complicated by severe infections, congenital cardiac anomalies, or birth injuries. Our results were very encouraging. Of about 100 cases of alimentary toxicosis observed the 88 more severe ones were treated in the manner previously described. Of these, there were 14 deaths, or a mortality of 15.9 per cent. It must be added that of the 88 cases, only 6 were over 12 months of age, and the majority of them were from 2 weeks to 8 months of age. In this series there were 14 marantic infants.

In the evaluation of these results we should not lose sight of the fact that the venoclysis was only the method of administering fluid, salts, and glucose in lieu of the oral, subcutaneous, or intraperitoneal routes, and that the blood transfusion, the rest, the period of oral starvation, and the realimentation by the staircase method were very important in our routine of treatment of alimentary toxicosis.

Soon after our early experience with venoclysis in the treatment of toxicosis it became apparent that the procedure might be applied to other toxemias and to severe metabolic disturbances in infancy and childhood, for regardless of the etiology, it is clear that any condition in which there is failure to imbibe sufficient water and salt, or a loss of these by vomiting, diarrhea, hyperventilation, or excessive sweating, or in the excretion of glucose, or the combination of several of the above factors will ultimately lead to a picture very similar to that of alimentary toxicosis, namely, vasomotor collapse and shock. It is well known that these are the findings in diabetic coma, intestinal obstruction, severe burns, heat exhaustion, and in severe toxemias of infection such as influenza, and some cases of septicemia, or dysentery in acute adrenal insufficiency, and histamine shock.

Up to January, 1934, a fairly representative group of such patients were treated with the aid of venoclysis.

Six cases of cyclic vomiting between 5 and 11 years of age were treated by venoclysis. Two of these cases had received 300 to 500 c.c. of 5 per cent glucose solution intravenously on one or two occasions before venoclysis was started, but the improvement was very transitory. These children relapsed into the comatose state. With one exception improvement followed

within an hour after venoclysis was started and progressed uninterruptedly. The one exception seemed to improve at first, then became worse. Marked diuresis and glycosuria were noted and it was believed that dehydration was caused by the treatment. The solution was therefore made hypotonic and a blood transfusion was given with good results. Venoclysis was given for a variable period from 6 to 24 hours in these cases.

Four cases of diabetic coma, one a child of 5 years, failed to respond to repeated injection of insulin and carbohydrates given per os, but they promptly emerged from the coma when the same amount of insulin and glucose were given by venoclysis for the greater part of a day.

A girl of 9 years was admitted with acute nephritis and uremic coma complicating cervical adenitis. She was oliguric. The few cubic centimeters of urine obtained on catheterization were red, contained much albumin, and many red blood cells. Her blood pressure was 130/90. Her blood chemistry revealed a urea nitrogen of 79 mg. per cent,  $\text{CO}_2$  content of 73 volumes per cent and 445 mg. per cent of cholesterol. She received the venoclysis of 10 per cent glucose solution for 24 hours, during which time she voided very little urine, but on catheterization 550 c.c. of bloody urine were obtained. The blood pressure dropped to 106/86. The child looked better and made a progressive recovery. The urea nitrogen dropped to 18 mg. per cent within 36 hours.

A male infant of 3 weeks with pyuria and staphylococcus bacteremia became anuric and revealed marked urea nitrogen retention and acidosis. He looked extremely toxic. By aid of the venoclysis this child promptly began to urinate freely and looked much better, but ultimately succumbed to his infection. He had multiple widespread abscesses in his viscera including his kidneys.

Two other infants 5 and 9 months of age, respectively, one with a sacral tumor causing loss of the bladder sphincter control and cystitis, the other with chronic pyuria, became oliguric and collapsed. These children were treated by venoclysis for 5 and 10 consecutive days, respectively. The fluid dosage was similar to that in the cases of alimentary toxicosis. The clinical improvement was striking as were the findings of the blood chemistry, which were typical of uremia with acidosis before treatment was started.

Five infants with pyloric stenosis admitted in very poor condition so that operation was considered too dangerous were given venoclysis. Two of these children who had convulsions and a markedly elevated blood  $\text{CO}_2$  and lowered sodium chloride content were treated, one for 7 days, during which time he improved sufficiently to be able to undergo a Ramstedt operation. By way of the venoclysis these infants were given the fluid and sodium chloride of which the tissues and blood were starved, and the glucose aided in maintaining them until ingested food passed the pylorus.

One child of 5 months with intussusception for 43 hours was treated by venoclysis before, during, and for 24 hours after the operation was performed to release the intussusception. A few days later vomiting of bile-stained fluid, epigastric distention, and failure to pass stool or gas by rectum resulted. Treatment by venoclysis with 5 per cent glucose solution for 3 days, gastric lavage, and oral starvation brought striking and rapid improvement clinically as well as in her blood chemical data.

Of 3 infants with widespread eczema who suddenly went into circulatory collapse and whose chemical pathology was similar to that of cases of alimentary toxicosis, 2 recovered under this treatment, whereas the third developed pneumonia and succumbed to it.

Several cases with extensive burns were given venoclysis for at least 24 hours resulting in marked diminution of the toxemia and improvement of the general condition.

Several cases of erysipelas with severe toxemia were successfully treated by venoclysis for variable periods of 2 to 7 days.

Few very young infants with widespread pneumonia and severe diarrhea and vomiting were treated by venoclysis with only temporary improvement in some cases and complete recovery in others.

Of 8 cases of streptococcus peritonitis in infants and children from 6 months to 4 years of age, 7 were only temporarily benefited by venoclysis. They looked brighter and their circulation was improved, but they ultimately died. The eighth case was in extremis when venoclysis was started. In some cases of peritonitis associated with a ruptured viscus (appendicitis), venoclysis seemed to be a life-saving measure.

The experience with several cases of tubercular, pneumococcus, and streptococcus meningitis were associated with only temporary improvement, no case having survived.

with a short bevel, usually a 21 gage, is introduced and strapped to the extremity with adhesive tape. The needle may have to be changed after 12 to 24 hours of venoclysis.

TABLE I

Case	Age	Diagnosis	Date	Hgb. %	RBC	Blood			Serum protein, %
						Na	Cl	Urea N.	
						Mg.	%	Co., vol. %	
351842....	5 M.	Toxicosis.....	5/ 8/33	90	4,930	515	21	23	7.3
			5/ 9/33	74	.....	620	14	30	6.8
			5/10/33	75	.....	670	.....	41	
329621....	11 M.	Toxicosis.....	8/31/31	50	4,240	714	45	17	7.6
			9/ 2/31	68	4,250	610	15	19	5.3
335808....	5 Y.	Cyclic vomiting.....	2/28/32	97	.....	490	16	27	Sugar 190 mg. %
337218....	9 Y.	Uremia Nephritis.....	2/29/32	.....	.....	.....	.....	48	85
			5/27/32	78	4,500	490	79	73	Bl. Pr. 130.90
			5/29/32	.....	.....	490	18	71	Bl. Pr. 106.86
332746....	5 M.	Uremia or toxicosis with pyuria	11/29/31	70	3,650	538	58	17	Protein 7.6
			12/ 2/31	.....	.....	460	9	31	6.3
			12/12/32	.....	.....	580	9	46	
344420....	9 M.	Uremia or toxicosis with pyuria	10/30/32	78	5,500	590	93	19	
			10/31/32	.....	.....	690	18	25	5.8
			11/ 4/32	70	.....	600	7	25	5.1
			11/15/32	.....	.....	555	8	46	
343186....	6 W.	Pyloric stenosis.....	9/ 8/32	65	3,900	235	.....	112	Calcium
			9/ 9/32	.....	.....	385	.....	100	10.7
			9/10/32	.....	.....	485	.....	86	Phosphorus
			9/13/32	.....	.....	540	.....	79	4.1
			10/ 3/32	.....	.....	585	.....	54	
345381....	5 M.	Intussusception postoperative intestinal atony	11/12/32	.....	.....	505	34	57	
			11/13/32	.....	.....	.....	11	37	

This table illustrates some of the blood chemical data before, during, and after treatment with venoclysis in the various cases mentioned in the text. Note the tendency for all figures to return to normal.

A boy of 11 years, ill with tetanus and unable to swallow, was aided tremendously by venoclysis given in interrupted periods of 12 hours during which sodium amytal was also given to cause sleep. This boy also received serum intrathecally and recovered.

Few cases of hydrocephalus associated with brain abscesses were temporarily relieved of their severe headaches and vomiting by venoclysis given in periods of 12 hours. They ultimately succumbed with diffuse purulent meningitis.

Thus, numerous disturbances in infancy and childhood were treated with the aid of venoclysis with considerable success as had been done before in comparable conditions in adult medicine and surgery.

#### TECHNIC

The technic of venoclysis is simple and has been described in some of our previous publications. It is worthy of repetition, however, that when working with older children whose veins are large enough for venepuncture, it is unnecessary to expose the vein surgically. A needle

#### FLUID REQUIREMENT

Our infants were in the majority of cases under 8 months of age, and only a few were 12 to 16 months of age. Such infants received from 100 to 200 c.c., averaging 130 c.c. per kilogram of body weight per 24 hours, or 0.4 c.c. per centimeter<sup>2</sup> of the sitting height squared per 24 hours. On the first day this quantity was increased by 25 to 50 per cent. No child of 12 months or younger needed more than 1,000 c.c. in 24 hours.

The daily quantity of fluid per kilogram of body weight diminished as the age of the child increased. Estimated roughly, children up to one year received the maximum of 1,000 c.c. in 24 hours. Those from 1 to 3 years received 1,000 to 1,800 c.c., depending on the size and ages of the children. The older children received approximately 40 to 100 c.c. per kilogram of body weight per 24 hours, depending on the amount desired.

#### TYPES OF FLUID USED

We have used normal saline, Ringer's, and Hartman's solution each, with 5 per



cent added glucose in all cases except where more hypertonic or hypotonic solutions were indicated. Our results do not show striking differences with these solutions. We believe that the glucose is of great value because it is a readily utilizable food and acts as a muscle stimulant, but primarily because it acts as a diuretic and an aid in the combating of acidosis. We have found that 5 per cent glucose is most ideal, because stronger solutions cause clotting and earlier clogging of the cannula and may cause diuresis to the point of dehydrating the patient.

We believe that if diuresis is established early, as was almost always the case, there need be no fear of ill effect from the injected sodium chloride. On the contrary, this salt is usually needed. This is also true in alimentary toxicosis when the acidosis is usually a chloride acidosis.

We give blood transfusions in most conditions treated. In alimentary toxicosis we have with few exceptions, used it routinely. We feel that because of its physiochemical nature, its colloid content, it remains in the circulation longer than saline solution and thus aids the circulation, besides possibly aiding as an oxygen conveyor and a detoxifying agent. We are careful not to inject blood in the presence of severe blood concentration, but find that blood dilution occurs in the first few hours after venoclysis, after which a blood transfusion is safe and helpful.

#### COMPLICATIONS

The complications of venoclysis are: (1) local infection and thrombosis; (2) embolism; (3) anaphylactoid reaction; and (4) edema which has already been referred to.

We have had local occlusion of veins after 10 to 96 hours in about 25 per cent of our cases, necessitating cutting down on a second vein if the first could not be cleared.

We observed local thrombophlebitis in 4 cases. In all it cleared up after application of wet dressings for 24 to 48 hours. There seemed to be a greater tendency for clot formation in the cannula when 10 per cent glucose was used than with 5 per cent. We have not found it necessary to routinely change the vein after 24 to 36 consecutive hours of venoclysis.

As for anaphylactoid reactions, when the fluid was freshly prepared to rid it of pyrogenic substances and the glassware and tubing properly cleansed so that the old blood clot, rubber powder, and excess

alkalinity is removed as recommended by Rosenthal,<sup>10</sup> when chemically pure salts were used, and when the fluid was injected slowly, no reactions occurred. The significance of injecting at a too rapid rate has been well presented in the paper by Hirshfeld and Hyman, who have named this reaction "speed shock."

#### CONCLUSIONS

Between 1928 and December, 1933, we have treated 88 severe and 12 mild cases of alimentary toxicosis and about 75 other children represented by cases of ketosis and coma associated with cyclic vomiting and diabetic coma, acute hemorrhage nephritis with anuria and hypertension, chronic pyuria complicated by collapse, oliguria, marked acidosis and azotemia, an infant with intussusception in preparation for laparotomy and postoperatively for atony of the upper intestine, pyloric stenosis cases which were almost moribund and had alkalosis, several cases of collapse in infants with eczema, a case of tetanus, and several cases of erysipelas, with gratifying results. Eight cases of primary streptococcus peritonitis, few cases of purulent and tubercular meningitis, brain abscesses, and some very severe pneumonias in very young infants were likewise treated, but in these cases the improvement which usually followed the early treatment with venoclysis gave way and the final outcome was poor, except in one boy of 4 with streptococcus peritonitis and several cases of pneumonia which recovered from almost complete collapse. Even in the cases which died, the treatment was supportive and prolonged life.

The surgeons of our hospital regularly use venoclysis in severe burn cases, in preoperative collapse or dehydration, and in postoperative shock. It is also used in extensive bleeding and to aid circulation, as well as to support the blood pressure during operation.

We believe that venoclysis is superior to the subcutaneous or intraperitoneal injection of fluid in conditions such as those discussed. In no other way than by venoclysis can fluid be injected at a steady slow rate without regard for absorption, or salts or sugar injected in varied concentration, or glucose injected in maximum quantities yet within tolerance rate. It is probably the most effective method of reducing blood concentration or serum protein, of supporting blood pressure, and relieving vasomotor collapse. It is very important

that the child is resting quietly while treatment goes on, and that stimulants or blood can be introduced through the same cannula without further disturbance to the child.

We believe that venoclysis is indicated in all toxemias and accidental poisoning of infancy and childhood, in all conditions associated with extracardiac or vasomotor collapse, in severe dehydration and blood concentration, in cases of demineralization, in severe acidosis or alkalosis, in gastrointestinal disturbances such as obstruction, mechanical or functional, in all of these conditions when fluid administration by mouth is either not possible or is inadvisable. It is further indicated to cause diuresis or the opposite, hydration of the body. By injecting solutions of proper tonicity it can be used to shrink the brain or increase the flow of spinal fluid.

In brief it is a procedure associated with relatively little danger when properly administered, only partially helpful in some conditions, but life-saving in others.

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1097 PARK AVENUE

## LABORATORY AIDS IN DIAGNOSIS

The New York State Association of Public Health Laboratories consists of the Directors of Laboratories throughout the State of New York which are approved by the State Department of Health. The Council of this Association decided to issue a series of leaflets on laboratory aids in diagnosis; the first one which concerned undulant fever was published in the JOURNAL some months ago. Your attention is now directed to the second one as follows:

## LABORATORY AIDS IN THE DIAGNOSIS OF TYPHOID AND PARATYPHOID FEVERS

The clinical course of typhoid and paratyphoid fevers varies greatly. The symptoms may approximate those of other diseases, such as influenza, undulant fever, and tuberculosis. Furthermore, a carrier of typhoid or paratyphoid bacilli cannot be detected by clinical observations alone. Thus, laboratory examinations of specimens are of great importance for confirmation of diagnosis in suspected cases and are necessary in the discovery and control of human sources of infection.

The etiological agents, *B. typhosus* and *B. paratyphosus* A and B, are discharged in the feces and sometimes in the urine of persons having the disease and in carriers. They may also be present in vomitus, especially if this contains duodenal contents, and in pathological discharges, such as pus from suppurating lesions. The infections are communicable so long as the inciting micro-organism is present.

When typhoid or paratyphoid fever is suspected, the physician is required, by special state regulations, to submit for examination to a laboratory approved, for that purpose: (1) 10 c.c. of the patient's blood or, if this is impracticable, from two to four drops of blood collected on a glass slide and allowed to dry; (2) a specimen of fluid feces and, if there is evidence of localization in the genito-urinary tract, a specimen of urine. During the first week of the disease, the

submission of blood for cultural tests is recommended. Specimens of feces must also be submitted before the patient is released.

## Laboratory Aids in Diagnosis

I. *The Agglutination Reaction.*—Agglutinative properties may not be demonstrated in specimens of the patient's blood before the end of the first week of illness. During the next two weeks, serological tests may be very helpful, particularly if sufficient blood has been collected so that accurate dilutions of the serum can be made and the granular and floccular agglutinative properties can be studied.

II. *Blood Cultures.*—The incitants may frequently be recovered from the blood stream during the first week of the disease. Their presence is, however, usually transitory, though occasionally they may be found four or even five weeks after the onset of the illness.

III. *Feces, Duodenal Contents, and Urine.*—Bacteriological study of the feces and urine is important to confirm definitely the diagnosis if *B. typhosus* or *B. paratyphosus* has not been isolated from the blood. For this purpose, fresh specimens are needed unless preservative is used (30 per cent glycerol in 0.6 per cent salt solution). Urine and particularly feces examinations are of special value in searching for carriers, as their blood may not give significant agglutinative reactions. Since in most typhoid carriers the focus of infection is the gallbladder, examination of duodenal contents is often more helpful than that of feces.

## Epidemiology

With the more adequate safeguarding of public water supplies, the typhoid carrier has assumed greater importance. Undiscovered carriers who are food handlers or live in a district where adequate means for sewage disposal are not available, are a particular menace.

THE NEW YORK STATE ASSOCIATION OF PUBLIC

A CLINICAL STUDY OF HERPES WITH A REVIEW OF  
FIFTY-EIGHT CASESALBERT R. McFARLAND, M.D.  
*Rochester*

Most of our knowledge of the etiology of herpes is of comparatively recent origin. It seems to have developed as a result of failure to find bacteria in such diseases as varicella, variola, and herpes. A stimulus to a study of the viruses has been afforded by the investigation of the bacteriophage phenomena by Twort<sup>1</sup> in 1915. He noted that in inoculating calf vaccinia on agar tubes, a watery substance developed about the cultures which destroyed the cultures themselves. This fluid could be transmitted. He considered it to be an enzyme.

D'Herelle,<sup>2</sup> in 1921, working along the same lines, considered this material to be an ultramicroscopic organism.

The connection between zoster and varicella has been repeatedly noted by numerous authors including Cipallaro,<sup>3</sup> Booth,<sup>4</sup> and Hill and Gray.<sup>5</sup> Numerous instances of varicella have developed from contacts with herpes and vice versa. Therefore, it seems fairly well established that herpes is caused by some type of virus.

## DIAGNOSIS

The diagnosis is usually easy to make from the clinical picture. In the simplex type, there are usually one or two small vesicular patches occurring most commonly about the mouth and cheeks, which is of sudden onset with practically no subjective symptoms except a little tingling or slight soreness on pressure. In the zoster type, we have the typical grouped vesicles along the general distribution of some nerve trunk and usually accompanied by more or less pain and tenderness in this region.

From an experimental standpoint it was apparently not possible to transfer the virus to animals until 1932. In that year, Youmans<sup>6</sup> succeeded in inoculating a rabbit with the virus from a case of acute herpetic fever. Instances are also recorded of the transfer of the virus from herpetic vesicles to children, resulting in the clinical picture of chickenpox. In 1926, Netter and Urbain<sup>7</sup> began to use the complement fixation test. In their series of cases, they found that 93 per cent of convalescents gave positive complement fixation tests.

Preherpetic pain is often the first symptom of the disease and may be present for several days before the skin eruption appears. This phenomenon is often a source of error in diagnosis. It has frequently been mistaken for acute appendicitis, pleurisy, obstruction of the ureter, sinus disease, and middle ear infections.

A diagnostic point which we have frequently encountered in zoster of the trunk, is a cutaneous reaction obtained by stroking the area involved. Perhaps this phenomenon has been noted before but I have been unable to find reference to it in the literature. If the herpetic lesions are already present, the skin is stroked in this area with a pencil or the finger tip and a reflex is obtained consisting of "goose pimples," in the area supplied by that particular nerve root. If the lesions are not yet present, it can be obtained by stroking the area of most intense pain. The phenomenon lasts only five or ten seconds and then subsides. This reaction can be repeatedly produced at will. The author does not know how consistent this reaction is, but has noted it on the last five or six cases of zoster, which he has observed. It may be of value in diagnosing pre-eruptive cases and also the area can be outlined which may later become involved with herpetic lesions.

## CLINICAL MANIFESTATIONS

Many different pictures are presented under the general heading of herpetic virus infections. One of the most severe is acute herpetic fever with stomatitis, such as has been reported by Youmans<sup>6</sup> and others. At the other end of the scale, we have the ordinary "cold sore," or the recurrent simplex type. According to the most common parlance, the term zoster is retained for what is commonly known as "shingles," and consists of multiple vesicular patches, with considerable pain, local discomfort, and some constitutional symptoms and usually occurring on the trunk extremities or side of the head. The latter, or ophthalmic, type often presents serious complications because of the structures involved.

Another clinical picture is that of encephalitis. This has been observed in cases

which are exposed to artificial heat treatment. In fact, it has been suggested by Glden<sup>8</sup> that a possible beneficial effect from malaria treatment in syphilis is the liberation of a virus which attacks the spirochete. In these cases it would seem that the high temperature releases for activity a latent virus, which otherwise remains dormant.

Other unusual pictures enumerated by Brain<sup>9</sup> are involvement of the geniculate ganglion with a loss of taste to the anterior two-thirds of the tongue with involvement of the external auditory meatus, palate, and anterior pillars, pseudo-arthritis, and motor paralysis of certain groups of muscles.

Lastly, a clinical picture which is being more frequently observed is a combination of zoster and varicella-like rash. Cipallaro<sup>3</sup> has called attention to two such cases and the author has recently encountered a similar one, that of a lady aged 55, who had a typical group of herpetic lesions under the right shoulder with considerable pain. She also had a generalized eruption quite typical of chickenpox. She was under the impression that she had had chickenpox as a child, but upon inquiry, was unable to confirm this opinion.

#### PATHOLOGY

The pathology of zoster is apparently that of posterior poliomyelitis. The virus is apparently not detected in the blood or spinal fluid, but according to Youmans<sup>6</sup> and others it travels along the axis neurone. The vesicles are not due to a trophic disturbance of the nerve trunk but actually contain the virus itself. In rare instances, the infection apparently travels along the nerve sheath back to the posterior roots and out again along a new nerve trunk. This may account for the appearance of lesions distant from the original site of infection.

#### PREDISPOSING FACTORS

Brain<sup>9</sup> and others have classified herpes under "symptomatic" and "idiopathic" types. This is probably not a fundamental distinction, but the term symptomatic is used where some obvious contributing factor has given the virus an opportunity to cause trouble. In reality all types of herpes are idiopathic under this classification; that is, they are caused by a virus, and other factors which have been mentioned in the etiology are really only predisposing.

Jacobs<sup>10</sup> has called attention to a case of bilateral herpes following the ingestion of arsenic accidentally mixed with flour. The explanation would seem to be that the arsenic intoxication predisposed the individual to the ravages of the virus. Wollheim<sup>11</sup> similarly has reported cases resulting from the administration of arsphenamine. Bismuth has occasionally been blamed with precipitating herpetic attacks. Artificial heat, exposure to wind, sunlight, and sudden changes of temperature often apparently initiate an attack.

#### CONTAGIOUSNESS

The author does not believe there is any evidence that herpes simplex is clinically contagious. There is, however, definite evidence, as shown by Hill and Gray,<sup>5</sup> Cipallaro,<sup>3</sup> and others, that zoster is a source of infection. Numerous cases of chickenpox have developed in children in a household where a case of zoster existed. Occasionally, but much less frequently chickenpox has been the source of an attack of herpes in another individual. It is a generally accepted fact, that children are more susceptible to the clinical manifestations of chickenpox and adults more susceptible to zoster.

#### IMMUNITY

Herpes simplex tends to predispose to subsequent attacks rather than to protect an individual. In fact, recurrences are the rule in this type. In this respect herpes simplex seems to differ from herpes zoster and would indicate possibly a different strain of virus. Recently, attempts have been made to immunize individuals against recurrent herpes simplex by inoculation with smallpox vaccine. The author has been informed of this procedure through verbal communication with several practitioners. The vaccination usually does not "take," but beneficial results may be obtained if it is repeated two or three times at three-week intervals. Zoster, on the other hand, seems to confer an immunity on the individual and recurrences are rare. Measures aimed at protection are therefore comparatively useless.

#### TREATMENT

Aside from the possible trying of smallpox vaccine as a preventive measure, very little treatment is necessary in herpes simplex for the individual attack. They usually subside in a period of about a week under some soothing local application.

In 1931, Ruggles<sup>12</sup> called attention to the possible value of sodium iodide to relieve the pain of zoster. Whether there is any special benefit derived from the intravenous route, the author is not certain. The work of Osborne<sup>13</sup> seems to show that iodides are absorbed and eliminated very quickly regardless of the route of administration. Possibly equally large doses of iodides by mouth would be as efficacious. In a considerable number of cases it does seem to afford relief from pain. Relief can also be obtained in many cases by roentgenotherapy of the nerve trunks involved and occasionally, the author has seen good results from counterirritation such as an erythema exposure to quartz light. Locally, relief is obtained more readily by drying lotions and protection with cotton batting. This method seems to be preferable to wet dressings or ointments. More recently, Niles<sup>14</sup> has called attention to the possible benefit of pituitrin injections.

As complications arise, the treatment will be determined by the organ or part involved.

John Gipner (personal communication) stated that glaucoma is not infrequent after ophthalmic herpes and suggests that all cases involving the eye be followed up with this in view. Impairment of hearing due to the involvement of the tympanic membrane and taste impairment of the anterior two thirds of the tongue may result from involvement of the geniculate ganglion. Cases are also reported of localized muscular paralysis as the result of involvement of a motor branch. Brain<sup>9</sup> has reported cases of involvement of joints simulating arthritis. Among the less frequent complications might also be mentioned encephalitis and death of a general septic type. The author has reviewed 58 cases of herpes encountered in private practice during the last two years. Table I is self-explanatory and indicates some of the data obtained. The outstanding points which seem apparent from this short series might be emphasized. First, it is apparent that the simplex type or ordinary cold sore is the most common, has a marked tendency to recur, individual attacks are

TABLE I

Type	Types encountered, per cent	Tendency to recurrence per cent	Complications per cent	Duration	Pain per cent	Treatment	Etiology
Simplex	61	50	Glands of neck 6 Local edema 6	Average 10 days	—	Vaccine 6% Local treatment only 94%	17% Sun and wind 6% colds
Zoster	27	6	Postherpetic pain 4 Varicella 1 case	Average 3 weeks	94	Quartz light A. I. Nal and x ray, sedatives	None
Ophthalmic	12	—	Postherpetic pain 5 Corneal ulcers 25 Glaucoma 8	Average 2 months	100	Sod iodide x ray sedatives	None

## COMPLICATIONS

The usual pain preceding or accompanying zoster can hardly be considered as a complication. There are, however, a small number of cases in which the pain persists for weeks or even months after the eruption subsides. This complication is often very resistant to treatment, but relief may sometimes be obtained by continuing the use of the iodides and x-ray as in the treatment of the active stage. In the ophthalmic type, severe and permanent damage to the sight may result. When one side or bridge of the nose is involved, we are very likely to have involvement of the eye also. This consists of vesicles on the cornea, which may result in permanent scars, retinal detachment, or glaucoma

of short duration, there is very little associated pain, and predisposing factors seem to be extreme changes in temperatures, sun, wind, and acute coryza. Very little treatment is needed for the individual attack, but for troublesome recurrences vaccination with smallpox virus seems to be of value.

The next most common type is zoster involving the trunk or extremities. In contrast to the simplex type, there is very little tendency to recurrence. On the contrary, an immunity seems to be established by an individual attack. The duration is longer in this type, and more or less pain is the rule. The ophthalmic type or that in which there is involvement of nerves of the tongue, ear, eye, and scalp, is the least common, but the pain is most severe.

the duration longest and complications more frequent. The last two types might be classified as strictly idiopathic, as in none of the cases studied was there any obvious predisposing cause.

Either sodium iodide intravenously or by mouth, or potassium iodide, seems to be of value in controlling the pain. Relief is also obtained by x-ray therapy of the involved nerve trunks, possibly by quartz light therapy and by the use of appropriate sedatives and local applications.

Complications of the simplex type consist of local glandular enlargement and local edema. The zoster type may be complicated by an accompanying varicella-like rash, postherpetic pain, and residual scars. The complications of the ophthalmic type are more common and severe, consisting of postherpetic pain, corneal ulcers, detached retina, and glaucoma.

#### SUMMARY

1. The virus nature of herpes seems to be fairly well established.
2. It would seem probable that a different species of virus is responsible for the simplex type than the ophthalmic and

zoster types. This suggestion is based on the different clinical appearance, variations in symptoms, difference in the tendency to recur, and the difference in the age group affected by each type.

3. The effect of treatment is summarized.

4. Various complications which may be encountered are enumerated.

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#### NEW AID FOR THE PARALYZED

A new method by which paralyzed individuals can replace their lost functions by the aid of simple, inexpensive mechanical appliances, electrically activated, is described in the *New York Medical Week*.

The several contrivances are the outgrowth of experiments by Dr. James S. Doyle, a New York engineer, who, at the request of the chief surgeon of this hospital, devised the original apparatus for a fourteen-year old patient totally paralyzed from the neck down. The only portion of his body the boy could voluntarily move was his head so, by an arrangement of photo-electric cells and a couple of light beams above his bed, the boy was able, by a movement of his head to right or left, interrupting one or other of the light beams, to turn over the pages of his book,

switch a radio on or off, or the electric light, or ring for a nurse.

The present apparatus, as shown at the Reconstruction Hospital, utilizes, in addition to the photo cell control, human breath control, and bodily contact in which practically no muscular power is necessary. To operate the photo-electric cell, all that is necessary is for the patient to interrupt a path of light and, in the case of the sound control, to blow into or speak into a miniature megaphone. Energizing the mechanism by means of bodily contact was another aspect which was demonstrated by touching of a sensitive rod by the tip of the patient's tongue.

Operating a typewriter, knitting or weaving machine, setting type and other occupations are among the possibilities so that such a disabled patient may ultimately become self-supporting.

#### A BETTER KIND OF "MEDICINE SHOW"

Do you remember the old-time cheap wagon shows that used to tour the rural towns with flaring torches and blaring bands, selling "tonics" that were mostly cheap whiskey at a dollar a bottle? Well, Germany has produced a "medicine show" of a very different sort. It is a huge motor truck, bearing in large letters the word "Gesundheit," or "Health." It is put on the road by the enterprising Hygiene Museum, of Dresden, and accounts say that it is designed to give graphic instruction in sanitation and care of the health to dwellers in the rural districts.

The autobus carries a large tent and collapsible seats, with the help of which a small

hygiene museum, with auditorium and cinema, can be erected in a short time in the remotest villages. Its transportable electrical plant makes it possible also to illuminate its exhibits in front of the tent and inside—plastic figures, graphs, pictures, charts, preparations, etc.

This first traveling show is devoted chiefly to the prevention of accidents in agriculture and industry, and the prevention of contagious diseases. The cinema supplements the effectiveness of the various exhibits, and there is even a Punch and Judy show for combining entertainment and instruction of the children.

## THE MANAGEMENT OF PLACENTA PRAEVIA

*An Analysis of the End Results of 57 Personal Cases*

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The uterus, during pregnancy and labor, is divided into two segments, the upper segment or contracting zone and the lower segment or zone of effacement and dilatation. Normally, the placenta is inserted on the anterior or posterior surface of the upper segment. Under certain abnormal conditions it may be attached to the lower segment when it is known as *placenta praevia*.

Three types of placenta praevia are recognized. *Marginol placenta praevia* exists when the placental edge is palpated, by the examining finger, at the internal os. *Lateral or partial placenta praevia* occurs when part of the cervical os is covered by the organ. *Central or total placenta praevia* is found when the os is completely covered by placental tissue. The degree of placenta praevia is influenced by the amount of dilatation of the cervix. Thus, what may be found to be a marginal placenta praevia at the onset of labor may prove to be a lateral as labor is more advanced as a good deal of the organ protrudes through the dilating os. Conversely, a placenta may appear to completely cover the os at the beginning of dilatation and may be found to do so only partially at the end of the first stage. As a result of placental implantation in the lower segment, three conditions arise: (1) increased vascularity of that region, (2) friability of the tissues leading to severe rents or tears during delivery, and (3) invasion of the cervical musculature by the villi leading to the rare pathological lesion known as placenta accreta.<sup>4</sup>

As a general principle, it may be stated that placenta praevia is about ten times more frequent in multiparae than in primiparae. Davis<sup>1</sup> gives the incidence of the disorder as 191 cases in a series of 41,686 births during a period of twelve years at the Chicago Lying-In Hospital, 0.46 per cent or less than once in 200 cases. Williams<sup>2</sup> stated in his textbook: "In general it would be approximately correct to say that it is met with about once in 1,000 cases in private, as compared with once in 250 cases in hospital practice." The incidence will depend, to a large ex-

tent, upon the accuracy with which examinations are made and statistics are collected.

Although many etiological factors are adduced, disorders of the endometrium seem to play a large rôle in the causation of the disease. Solomons and Canter,<sup>3</sup> on the bases of clinical experience and animal experiments, believe that the cause of placenta praevia lies in a defective or deficient production of the decidua formation in the upper portion of the uterus, with a normal or sufficient amount of decidua in the lower portion of the uterus. When, therefore, the fertilized ovum, enters the uterus, it will seek the place where it can obtain the greatest amount of nourishment. Since the upper portion is deficient or poorly developed to receive the tenant it will be attracted to the greatest amount of decidua reaction—in the lower portion of the uterus. Infections and frequent pregnancies are believed to be the factors which predispose to deficient decidua formation. To avoid repetition of the disease, Solomons, in a paper read before the British Medical Association in 1929, advised a curettage of the uterus following placenta praevia before the next pregnancy and stated that in his practice there has never been a "repeat" case. In view of the foregoing, curettage may prove to be a valuable addition in the treatment of this anomaly.

Hemorrhage without pain in the last trimester of pregnancy is usually due to placenta praevia, while hemorrhage with pain is the result of the premature separation of the normally implanted placenta. While seeking the cause of hemorrhage at this stage of pregnancy, a pedunculated tumor—myoma or sarcoma—a polyp, a cervical erosion, a vaginal or cervical varix may be ruled out by their peculiar characteristics. The palpation of placental tissue partially or wholly covering the os will lead to the proper diagnosis.

### TREATMENT

Emphasis must be laid upon the fact that the most important single factor in the treatment of placenta praevia is the

hospitalization of the woman. This offers no great difficulty in this time and age, when many hospitals are available and where good roads lead to them. The question of vaginal packing before removing the patient to the hospital always arises. As a general principle it is best to avoid the pack whenever possible. A tight abdominal binder together with a tight vulvar pad, suffice to control the hemorrhage in the majority of cases. The pack is dangerous because it increases the element of infection. In some cases, however, this danger is less than that occasioned by a violent hemorrhage. If the pack must be introduced, due regard to asepsis must be observed as much as possible. The pack should consist preferably of iodoform gauze and, in its absence, of plain sterile gauze. In the presence of a severe hemorrhage and in the absence of gauze the vagina may be tightly packed by several large pledgets of absorbent cotton wrung out of weak lysol solution. In any event, a tight abdominal binder is applied after the introduction of the packing material. Even in a modest home, thorough scrubbing of the vulva, lower abdomen and inner aspect of the thighs with soap and water, followed by weak lysol solution, and the draping of the field with four wet, recently boiled, towels, or, if the saving of minutes is a factor, four cleanly laundered towels, soaked in and wrung out of weak lysol solution, will give a clean field through which the tamponade may be accomplished. Vaginal tamponade, however, is only necessary in a small percentage of the patients.

In the light of our present knowledge, accouchement forcé should have no place in the treatment of placenta praevia. In the treatment of this disorder there are three distinct schools of thought: (1) those who favor purely obstetrical procedures in the majority of women so afflicted, (2) those who advocate surgical methods, as, cesarean section in one of its varieties, (3) those who try to individualize their patients and apply what, in their opinion is, everything being equal, the best form of treatment for the particular patient. The author has tried to follow the dictates of the last school. The obstetrical methods may be divided into four groups: (1) the wide rupture of the membranes, the delivery being left to nature, (2) the introduction of a metreurynter, extra- or intra-ovularly, followed by spontaneous or artificial delivery, (3) the Braxton Hicks

version, with spontaneous delivery, and (4) version and extraction or forceps extraction at full dilatation of the cervix.

Accumulating experience has taught obstetricians that the cervix and lower uterine segment, in cases of placenta praevia, are extremely friable, and that rupture of the uterus with its exceedingly high mortality may follow any attempts of delivery through the imperfectly dilated cervix. Hence, if a pelvic delivery is decided upon, this should not be attempted until the full dilatation of the cervix, a point which cannot be emphasized too frequently and too forcibly. Kellogg,<sup>2</sup> in a recent paper on the subject, implied that the badly scarred multiparous cervix is a contra-indication for delivery from below. This point must be stressed, since a laceration having its origin in such a scar may readily extend to the lower uterine segment and also because these scarred devices are inelastic and tear easily during the process of dilatation.

Which of the four obstetrical methods outlined above should be used in a given case? In the few women who cannot be moved to the hospital, the Braxton-Hicks version or metreurysis in the lateral or central varieties of placenta praevia and the wide rupture of the membranes in the marginal, will probably give the best results. Patients in the home are very seldom seen at full dilatation of the cervix so that a version and extraction or forceps delivery may be performed. It is understood, of course, that the attendant should not leave the patient from the moment treatment is instituted until the completion of the delivery. The third stage, after obstetrical intervention, should be carefully watched and the patient should be kept under observation for some time after the expulsion of the placenta. Ergot should be administered intramuscularly and posterior pituitary extract, by the same avenue or intravenously, in the severe forms, to keep the uterus well contracted. If, despite a well-contracted uterus, bleeding persists, the cervix should be inspected and lacerations giving rise to hemorrhage sutured. Uterine and vaginal tamponade, with iodoform gauze or plain sterile gauze may become necessary to control the bleeding in some instances.

*Transfusion.*—Blood transfusion has become so simplified in the last two decades that it is now extensively employed in the treatment of placenta praevia. The ad-



ministration of blood by the citrate method is no more difficult than the introduction of saline solution intravenously. This procedure is responsible for the saving of many maternal lives, as following its employment, treatment for placenta praevia may be carried out safely, where these same procedures would be dangerous, if not disastrous, if employed in a patient who had lost a great deal of blood.

The *surgical methods* employed in the treatment of placenta praevia are also four in number: (1) vaginal hysterotomy, (2) classical or corporeal cesarean section, (3) low or cervical cesarean section, and (4) Porro cesarean section, or cesarean section followed by hysterectomy.

Vaginal hysterotomy has found but few adherents and is seldom practiced for placenta praevia to-day. The friability of the lower uterine segment, the hemorrhage during the intervention, and the restricted field of operation make it difficult of performance, while the high fetal mortality speaks against it.

Abdominal delivery is constantly gaining adherents in the treatment of placenta praevia. Here one must choose between the classical or corporeal cesarean section and the low or cervical procedure. Those who favor placing the incision on the body of the uterus do so on the grounds that by so doing the placental site is avoided and there will be less hemorrhage during delivery. The protagonists of the cervical cesarean section find that by making the incision in the lower segment, the placental bed may be inspected after the delivery of the placenta, that bleeding areas may be sutured and hemorrhage controlled, that the method offers definite protection against infection in these anemic patients, and that the maternal mortality is lower. Recent statistics covering 376 cesarean sections performed for placenta praevia, 300 cervical and 76 corporeal, showed a maternal mortality of 4.33 per cent for the former, against 12.65 per cent for the latter. The Porro operation, or cesarean section followed by hysterectomy, is reserved for the badly infected woman and for the parturient whose uterus does not contract well after the delivery of the fetus and placenta. In the author's series of 57 placenta praeviae, he had only had recourse to it in one woman, or in 1.75 per cent of the cases. One point in technic worth mentioning in connection with this procedure is that it is far safer to ligate

the ovarian vessels in the infundibulo pelvic ligaments than close to the uterus in ecchymotic, friable tissue. Hemorrhage is far better controlled and secondary hemorrhage much better avoided by the former method, even though it entails the sacrifice of the ovaries.

In the author's hospital practice the method of delivery depends upon the dilatation of the cervix, the amount of hemorrhage and the parity of the patient.

Primiparous patients having a marginal placenta praevia are usually treated expectantly, by the wide rupture of the membranes and metrorrhysis, and are delivered through the birth canal—normally, by forceps or by version and extraction. If the hemorrhage is free and if there is no cervical dilatation, the cervical cesarean section is resorted to. Lateral and central placenta praeviae are treated by the cervical cesarean section if the cervical dilatation is slight or absent and if the hemorrhage is severe, and by delivery through the birth canal if the opposite is true. Multiparous patients with a marginal or lateral placenta praevia are treated expectantly unless there is free hemorrhage, when the cervical cesarean section is performed. Central placenta praevia is usually treated by the cervical cesarean section, the only exception being when the patient is admitted with full dilatation of the cervix. The Porro operation is reserved as a method of security and safety in a rare neglected case. Thus far the author has not had recourse to the classical or corporeal cesarean section in the treatment of placenta praevia.

Paucot and Reeb<sup>3</sup> presented a report, entitled "The Surgical Treatment of Hemorrhages by Insertion of the Placenta on the Lower Segment," before the eighth Congress of L'Association des Gynécologues et Obstétriciens de Langue Française, which was held in Paris on October 5, 6, and 7, 1933. This report is an extensive one and contains recent statistics on placenta praevia. The purely obstetrical interventions numbered 1,716 or 78.07 per cent, against 482 surgical interventions or 21.93 per cent. These statistics were obtained from twenty members of the Association, 19 European and 1 American, men who were heads of hospital services, their statistics showing hospital results rather than results of patients treated in their homes. Under obstetrical procedures were considered: (1) wide rupture of the

membranes followed by spontaneous delivery, (2) introduction of a metreurynter after rupture of the membranes or perforation of the placenta, (3) Braxton-Hicks version (without rapid extraction), (4) version and extraction or forceps at advanced dilation, and (5) the method of Delmas (of Montpelier), which consists of manual dilatation of the cervix, followed by version and extraction, under spinal anesthesia.

The maternal mortality in this series of obstetrical procedures was 7.82 per cent, the fetal mortality 51 per cent. The authors state that the fetal mortality has not varied in 20 years and varies but little in the hands of different operators. There is a marked difference, however, between the simple rupture of the membranes with a fetal mortality of 34.50 per cent, and the other technics, which all sacrifice more than 50 per cent of the children, the Braxton-Hicks version giving a fetal mortality of 83.60 per cent.

The surgical methods considered were the low or cervical cesarean section, the classical cesarean section, and the Porro cesarean section or cesarean section followed by hysterectomy.

Vaginal hysterotomy is taken up separately since it is more closely related to the obstetrical technics rather than to the surgical or abdominal procedures. The maternal mortality of this intervention is given as 15.38 per cent and for this reason it is not surprising that it is almost abandoned. For the above mentioned abdominal surgical procedures the maternal mortality was 8.42 per cent. This mortality is divided as follows: Low or cervical cesarean section, 300 cases, 13 deaths, or 4.33 per cent. Corporeal or classical cesarean section, 76 cases, 10 deaths, or 12.65 per cent. Porro or hysterectomy, 63 cases, 14 deaths, or 20.31 per cent.

If cesarean section, as a whole, gives maternal results almost identical with those of the purely obstetrical methods, the better results of abdominal delivery are credited to the low or cervical cesarean section. This intervention, which was slowly adopted by the French School, has now largely supplemented the classical operation. The results of this low operation are even more startling when it is considered that the majority of those who favor it had recourse to it only in 10 to 30 per cent of their hemorrhage cases and reserved it for their most severe ones. For the

child, the surgical treatment shows markedly improved results, since the gross fetal mortality has decreased to 22.42 per cent. Vaginal hysterotomy gives 39.13 per cent, abdominal hysterectomy, 25 per cent, Porro, frequently employed in desperate cases, where the fetus is already dead, 71.42 per cent, the corporeal or classical cesarean 16.17 per cent, and the low or cervical cesarean 11.11 per cent.

The study of the moment where the child dies confirms the salutary value of the surgical method, for, if the secondary mortality, due largely to prematurity, remains about the same as in obstetrical interventions, with figures of 9.05 per cent, the mortality during the course of the operation falls from 43.76 to 12.89 per cent.

The authors summarize their report as follows: "Hemorrhages from low insertion of the placenta do not justify the systematic employment of the surgical methods; the majority remain amenable to the wide rupture of the membranes. Outside of this intervention we must have recourse to the surgical methods. The low cesarean is then the procedure of choice, since it best safeguards the mother's life and shows itself very superior to any other treatment for the salvation of the child. Hysterectomy is a procedure of safety and of necessity to which it is occasionally indispensable to have recourse."

These results are those of well-trained obstetricians working in well-equipped maternity hospitals. Similar results cannot be obtained in the home, by those who have had less training. Miller, quoted by Williams,<sup>6</sup> gives a mortality of 36 to 40 per cent for the mother under the expectant plan of treatment and of 66 per cent for the children. One of the most important factors in the treatment of placenta praevia is hospitalization of the patient.

#### STATISTICS

An examination of the author's personal records, from November 7, 1917, to October 17, 1933, shows that during this period of approximately sixteen years, he has treated 57 cases of placenta praevia. In this group 23 women were subjected to the obstetrical treatment or delivered through the birth canal and 34 were treated surgically or delivered abdominally. In the series of 23 patients treated obstetrically, central placenta praevia was encountered 8 times, lateral placenta praevia 8 times,

and marginal placenta praevia 7 times. The 8 patients who had central placenta praevia were delivered by version and extraction and there were 5 manual extractions of the placenta. In the class of 8 who had lateral placenta praevia, there was one set of twins and the following obstetrical procedures were employed: version and extraction, six times; low forceps, twice; breech extraction once; manual extraction of the placenta three times and metrorrhysis twice. Marginal placenta praevia was observed in 7 parturients, 4 of whom were delivered by version and extraction, 1 by high forceps and 2 by breech extraction; in addition there were 3 manual extractions of the placenta and one induction of labor by means of bougies. In the cases of central placenta praevia, gestation had reached seven months in 3, seven to eight months in 1, eight months in 1, and term in 3 women. In the patients who had lateral placenta praevia, gestation had reached seven months in 5 and term in 3 women. In the parturients with marginal placenta praevia, gestation had reached seven and one-half months in 1, eight months in 2, and term in 4 women. There were, then, in this series of cases, 13 premature or immature infants.

#### OBSTETRICAL TREATMENT OF PLACENTA PRAEVA

##### Results

- 23 Cases      2 maternal deaths, or 8.6 per cent  
One death caused from ruptured uterus,  
the other from general peritonitis
- 24 Children born, one set of twins, sixteen fetal  
deaths, or 66.6 per cent
- One patient seven months pregnant, admitted  
with general peritonitis from acute gangrenous  
appendicitis with rupture and who died from  
general peritonitis deducted leaves—one maternal  
death in 22 cases or 4.5 per cent

Thirty-four patients were treated surgically or delivered abdominally. In this series, central placenta praevia was encountered 21 times, lateral placenta praevia 6 times, and marginal placenta praevia 7 times. In the group of 21 central placenta praevia cases, 4 cervical cesarean sections with a vertical incision, 14 cervical cesarean sections with a transverse incision, 2 Veit-Fromme-Hirst cesarean sections (peritoneal exclusion), and 1 Porro cesarean section, or cesarean section followed by hysterectomy, were performed. The 6 women with lateral placenta praevia and the 7 with marginal placenta praevia were delivered by the cervical cesarean section with a transverse incision. In the 21

patients who had central placenta praevia and who were treated surgically, gestation had progressed to seven and one half months in 3, eight months in 3, eight months and one week in 1, eight and one-half months in 1, and to term in 13 women. In the 6 parturients with lateral placenta praevia treated surgically, gestation had reached eight months in 2, eight months and one week in 1, and term in 3 women. In the 7 who were surgically treated for marginal placenta praevia, gestation had reached eight and one half months in 2 and term in 5 women. Among those treated surgically, 13 premature or immature infants were found, the same number which was found in the obstetrically treated parturients.

#### PREVIOUS CERVICAL CESAREAN SECTION

In 5 women previous cervical cesarean sections had been done. In this class a central, 2 lateral and 2 marginal placenta praeviae were found. Two women had had two previous cervical cesarean sections and, at the time of the third cervical cesarean section, each had a lateral placenta praevia. One woman had had three previous cervical cesarean sections and, while doing the fourth cervical cesarean section, a marginal placenta praevia was encountered.

#### MORBIDITY

In the group of 33 cervical cesarean sections performed for placenta praevia the following postoperative complications were observed:

Septic abdominal incision	1
Separation of abdominal incision	1
Intestinal paresis, responding to treatment	1
Leishmaniasis. Acute gastric dilatation	1
Severe secondary anemia requiring transfusion	1
Phlebitis	2
Total	7

All mothers who had these complications recovered.

#### SURGICAL TREATMENT OF PLACENTA PRAEVA

##### Results

- 34 Cases      1 maternal death, or 2.9 per cent  
One maternal death from acute dilatation  
of the stomach and intestinal paresis  
forty eight hours after delivery. Patient  
had had a previous operation for pelvic  
inflammation. A jejunostomy was per-  
formed and no sign of peritonitis noted
- 35 Infants born one set of twins 6 fetal deaths,  
or 17.1 per cent

#### PLACENTA PRAEVA COMPARATIVE MORTALITY

##### Obstetrical Treatment

23 Cases, 24 children delivered	
Maternal mortality	
Gross	8.6 per cent

Corrected ..... 4.5 per cent  
Fetal mortality ..... 66.6 per cent

### Surgical Treatment

34 Cases; 35 children delivered

Maternal mortality:

Gross ..... 2.9 per cent  
Fetal mortality ..... 17.1 per cent

The fetal mortality in each instance is uncorrected and includes the macerated fetuses, the stillborn and the premature infants.

In the cesarean group all babies delivered at or near term survived.

### CONCLUSIONS

1. Placenta praevia is one of the grave obstetrical complications.

2. Improvement in the mortality statistics of this malady will depend largely on the hospitalization of the patients whenever possible.

3. The treatment may be obstetrical or surgical. Each case should be individualized and the best form of treatment for the particular patient applied.

4. Accouchement forcé has no place in the modern treatment of placenta praevia.

5. Blood transfusion plays an important rôle in saving maternal lives.

6. Abdominal cesarean section, preferably the low or cervical operation, gives the best results for the central and lateral varieties.

7. Obstetrical procedures should receive first consideration in the marginal variety

and in the lateral type in multiparous patients.

8. In nulliparous women, before the onset of labor, and when the hemorrhage is severe, cesarean section will give the best results regardless of the variety.

9. Fetal results are markedly improved by abdominal delivery.

10. Hysterectomy is rarely necessary, but, in the presence of uncontrollable hemorrhage, it becomes an operation of necessity and safety.

11. Fifty-seven personal cases of placenta praevia are reported. For the obstetrical procedures, the gross maternal mortality was 8.6 per cent, the corrected maternal mortality 4.5 per cent, while the uncorrected fetal mortality was 66.6 per cent. For the surgical methods, the uncorrected maternal mortality was 2.9 per cent and the uncorrected fetal mortality was 17.1 per cent.

12. The fetal mortality was due, in a large measure, to prematurity.

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### VITAMIN CLAIMS IN FOOD ADVERTISING

The Committee on Foods of the American Medical Association has published a criticism of indefinite or general vitamin claims in advertising, which, it says, are vague, noninformative and misleading and do not permit a distinction between foods as sources of respective vitamins. Vitamin claims, the committee rules, shall stipulate the specific vitamin or vitamins present. Vitamins present in a food in insufficient quantity to contribute in any significant manner to the respective vitamin values of the diet do not warrant mention. It is desirable that warranted vitamin claims be expressed in appropriate terms indicative of the relative potency of the food as a source of the vitamins in the dietary schedule. Foods may be considered relatively as fair, good, and excellent or rich sources of vitamins. Statements of vitamin unitage in numerical quantities per gram (and per ounce if desired), where established, are to be encouraged on container labels and in advertising. The type of unit used should be specified. These statements shall be so expressed as not to be misleading.

Relative distribution of the vitamins in the various foods is presented in tables by Sherman (Chemistry of Food and Nutrition, fourth edition 1932), by Rose (Foundations of Nutrition,

revised edition, 1933) and by a committee appointed jointly by the Lister Institute and the Medical Research Council of England (Vitamins: A Survey of Present Knowledge, 1932). These tables should serve as a guide for comparative vitamin claims for food in advertising.

A new plan to provide purer milk in England had been devised by the Milk Marketing Board, a body appointed by the government to control the milk industry. It is to come into operation in October. As described by the London correspondent of the A.M.A. Journal, it is proposed to prescribe a standard of purity for milk, and producers who conform to it will receive a bonus on every gallon of milk. Funds for the payment of this bonus will be provided by the levy of a small sum on all producers of milk. The new grade will be termed "accredited milk." The farm, the cow and the milk will be subject to expert examination by local health authorities. The object is not to produce a highly superior grade of milk of limited quantity but to raise the general standard of milk. It is thought that the majority of producers, attracted by the bonus, will conform to the prescribed standard of purity.

## EPILEPSY OF ALLERGIC ORIGIN

T WOOD CLARKE, M D

Utica

To the average physician, the term allergy means asthma, hay fever, eczema and urticaria, and nothing more

Recent investigations, however, prove that the phenomena of allergy may involve practically any organ in the body

Pollen dermatitides are well known Chronic rhinorrhea, or perennial hay fever, may be due to foods or to animal emanations such as dog hair or parrot feathers Recurrent bronchitis has been traced to canary feathers or cat hair Many cases of croup are manifestations of allergy

Gastro intestinal allergy may appear as canker sores, cyclic vomiting, and acute or chronic digestive disturbances Cases of scleritis, vernal conjunctivitis, retinal edema, and episcleritis have been assigned an allergic etiology

Certain acute and chronic arthritides appear to have an allergic basis<sup>1</sup>

The manifestations of allergy which we are considering to day, are those of the central nervous system, especially epilepsy

When a specific protein comes in contact with a body cell previously sensitized thereto, an allergic reaction occurs This manifests itself by three processes stimulation of gland secretion, spasm of smooth muscles, and hyperpermeability of capillary walls causing local edema<sup>2</sup> If these pathological changes take place in the bronchi, bronchitis or asthma results, if in the nasal mucous membrane, hay fever or rhinorrhea appears, if in the skin, eczema, urticaria, or angioneurotic edema makes its appearance, and if in the intestines, acute edema of the intestinal wall, causing symptoms resembling appendicitis, abdominal tumor, intestinal obstruction, or mucous colitis, may occur

Theoretically, if a process resembling angioneurotic edema should occur in the cranial cavity involving the meninges, the brain substance, or the pituitary gland, the sudden increase of intracranial pressure should produce transient symptoms analogous to those of brain tumor The classical symptoms of brain tumor are headache, dizziness, vomiting, symptoms referable to pressure on the optic nerve, and convulsions The first four of these are characteristic of an attack of migraine When

the convulsions occur alone, and supposedly idiopathically, we call it epilepsy

Where patients have died during an attack of migraine, the pathologist has found nothing but cerebral edema If death occurs from status epilepticus, a similar picture presents itself

Asthma, urticaria, migraine, and epilepsy all have a familial tendency all occur suddenly and periodically, the attacks are of brief duration, and between the violent outbursts the patient is usually in normal health All are characterized by local edema, all, until recently, were considered of unknown etiology and usually incurable These facts alone should arouse our suspicions that they are but different manifestations of a common underlying pathological process

In 1919, Pagniez<sup>3</sup> in France called attention to the similarity between migraine and the allergic diseases, treated a series of cases of migraine with nonspecific proteins and peptones, and got good results

In 1921, Thomas R Brown,<sup>4</sup> in a study of migraine, called attention to the fact that one group of cases seemed closely related to protein ingestion

In 1927, Vaughn<sup>5</sup> performed skin tests on 33 cases of migraine, removed from the diet all proteins giving a reaction, and, in many cases, stopped the headaches He then fed the offending proteins, and produced prompt attacks of typical migraine In 16 cases he believed allergy to be definitely proven and found that the attacks could be prevented or produced at will, 10 cases were not benefited, of 7 he lost track Vaughn believed the condition to be one of angiospasm

In 1928, Balyeat<sup>6</sup> in a study of the heredity of the allergic diseases, found that they followed closely the Mendelian law, and that migraine was interchangeable with asthma, hay fever, and urticaria in the linkage

Since this, Balyeat<sup>7</sup> has published several studies of migraine, and in 1931 had collected 202 cases In practically every case a positive skin test to some food was obtained A family history of allergic disease was discovered in 82 per cent of the cases, and 81 per cent of the patients

themselves, suffered from some other manifestation of allergy. He concluded that all cases of migraine are of allergic origin, but he differed from Vaughan in his belief that the lesion was a cerebral edema, not an angiospasm.

In 1930, Rowe<sup>8</sup> reported 86 cases of migraine, 74 per cent gave a family history of allergy, 12 per cent of the patients had asthma, 17 per cent hay fever, 43 per cent cutaneous allergy, and 64 per cent abdominal symptoms which he considered of allergic nature.

In 1931, Eyermann<sup>9</sup> reported 63 cases of headache. In 44 of them, not only were positive skin tests to various foods obtained, but the headaches could be prevented and produced at will by feeding the foods to which the tests proved the patient sensitive.

In Eyermann's cases other symptoms suggesting allergy accompanied the headaches, such as coryza, dizziness, nausea and vomiting, edema of eye, nose, lips, and slight general edema of the skin. This last was so definite that some of the patients increased 5 lb. in weight during the migraine attack, to lose it again as soon as the attack was over.

Eyermann advises the term allergic headache rather than migraine, and believes that it is due to a cerebral edema resembling an angioneurotic edema.

In 1932, De Gowin<sup>10</sup> confirmed the work of Balyeat, Rowe, and Eyermann in a study of 60 cases of migraine. In the same year, Goltman,<sup>11</sup> in a study of 43 cases, concluded that foods are of paramount importance in the majority of cases, but that occasional inhalants as animal hair, pollens, orris root, and insect powders are causative factors. He believed that combinations of allergic and endocrine migraine are common.

It will thus be seen that the evidence that at least some cases of migraine are of allergic origin and are curable, rests on a firm theoretical, experimental, and clinical basis.

The close affiliation between migraine and epilepsy has long been recognized.<sup>12</sup> A study of the two conditions from the allergic viewpoint adds fresh evidence to this relationship.

Among the many causes mentioned as inciting attacks of epilepsy, indiscretion in diet has always held a prominent place. In 1921, Wechsler<sup>13</sup> called especial atten-

tion to the relations of foods to epilepsy and said that it seemed to him "that there is something akin to a sensitization, a reaction of the organism to certain proteins, or possibly endotoxins, which result in convulsive phenomena." He quoted one patient in whom his epileptic seizures were cured by removing eggs from his diet.

In the same year Thomson,<sup>14</sup> of London, in a study of 200 cases of infantile convulsions, stated his belief that these were usually cases of poisoning by milk, eggs, or cereals.

In 1922, Ward<sup>15</sup> propounded the theory that epilepsy was as much a manifestation of allergy as is asthma, and he reported two typical cases of epilepsy, one sensitive to milk, cheese, casein; beef, and veal, entirely relieved by removing these bovine foods from the diet, and the second relieved by the removal of cows' milk and its products.

In 1923, Howell,<sup>16</sup> of Columbus, reported a series of 14 epileptics, who showed sensitivity to either foods or bacterins. On numerous occasions epileptic attacks were precipitated within a few hours after ingestion of foods to which the patient reacted, and the complete withdrawal of these from the diet, or in the bacterial cases, vaccine inoculations, caused marked improvement in the epilepsy.

The first extensive study of epilepsy from the allergic viewpoint was made by Wallis and Nicol<sup>17</sup> in London, in 1923. They studied 122 insane epileptics. Each case was given skin tests by the scratch method with the following group of proteins: (1) egg proteins, (2) meat and fish proteins from beef, mutton, veal, chicken, game, fish, shell fish, etc., (3) milk from various animals, (4) vegetable proteins including nuts and fruits, (5) cereals, (6) peptones, and (7) control of sodium hydrate. Of the 122 cases, 46 gave positive skin reactions. In a series of 100 controls who were not epileptic, only 4 reacted. The authors also reported 14 epileptics in whom positive skin tests were obtained, who were cured, either by withdrawing the offending proteins, or by giving peptone.

In 1924, Miller<sup>18</sup> pointed out many points of similarity between asthma, urticaria, migraine, and epilepsy. He showed that all had a hereditary character and a nervous element, were modified by acute infections and by pregnancy, and have

been reported cured by the injection of various nonspecific proteins, such as horse serum, tuberculin, typhoid vaccine, and peptones

Van Leeuwen and Zeydner<sup>19</sup> isolated a substance from the blood of cases of asthma, urticaria, migraine and epilepsy, which, when injected into animals, produced muscle contractions. No such substance could be isolated from normal patients or sufferers from other ailments.

Duke,<sup>20</sup> in his book, refers to a patient with convulsions, asthma, temporary paralysis, and anesthesia who gave skin reactions to various vegetables and fruits. She was free from symptoms as long as she avoided the offending proteins. Attacks could be produced by feeding the specific allergens.

In 1927, an extensive and suggestive piece of work was carried out by Ward and Patterson.<sup>21</sup> One thousand epileptics at Craig Colony and the New Jersey State Village for Epileptics were given skin tests with protein extracts. The authors fail to state how many tests were made on each patient, or just what type of reaction they considered to be positive. Of the 1,000 cases, however, 48 per cent gave one or more positive reactions, while in a series of 100 nonepileptic controls only 8 per cent reacted. Apparently these most interesting findings were not followed up as no report of therapeutic results has appeared.

In 1927, Spangler<sup>22</sup> analyzed 100 cases of epilepsy, and found that in 88 per cent of the cases there was a family history of allergy. He then reported a series in which the ingestion of certain foods was believed to be the exciting cause of the epileptic attacks, and the withdrawal of the foods caused their disappearance.

Rowe,<sup>23</sup> in 1927, reported 2 cases of epilepsy in children, one associated with asthma in which pollen treatment cured both the asthma and the epilepsy, and the other in which horse hair desensitization resulted in freedom from attacks.

In 1930, Waldbott<sup>24</sup> reported 2 cases of epilepsy and asthma alternating.

Levin,<sup>25</sup> in 1931, reported a child of three who had convulsions, gave skin reactions to cheese, was free from convulsions on a cheese-free diet, but had a return on breaking her regime. He also referred to a case sensitive to cat hair, that was free from convulsions after removal of cats from his environment.

In the same year Spangler<sup>26</sup> reviewed the present theories of epilepsy and allergy and concluded that certain experimental, hereditary, biochemical, chemical, and therapeutic factors support the theory that epilepsy is a response to an allergic metabolic disturbance.

During the past three years, several other authors<sup>27</sup> have reported series of cases in which there was evidence that the epilepsy was of allergic origin.

The writer's personal experience with the allergic factors in epilepsy, while not sufficiently extensive to be conclusive, is significant enough to bear reporting in the hope of stimulating others to further investigations of the subject.

Of the cases in private practice, as some patients did not return to have the tests completed, and others have been lost track of, statistics are of no value. However, there are two cases which have been observed from one to three years.

CASE 1—M F, 10 years of age, was referred to the author by Dr. Price Lewis of Holland Patent, N. Y., with a diagnosis of epilepsy. Her family history is not significant. Her father and mother are in good health. Her father is a dairy farmer and she lives on the farm. In her past history, the only point of importance is that she had asthma since infancy. The onset of her epileptic convulsions was at the age of six years. The epileptic attacks had increased in frequency during the past four years, until they were occurring on an average of twice a week. Though unfamiliar at that time with the work that had been done on the relation between allergy and epilepsy, it was suggested that if the asthma could be cured the epileptic attacks might become less frequent. No hopes were offered for a cure of the epilepsy. The parents agreed, and eighty skin tests were made by the scratch method with the following positive results: cattle hair + + +, cottonseed + + + +, radish + +, and cheese + —.

Cotton was removed from her environment, radishes, cheese, and salad oils eliminated from her diet and, as her home conditions precluded the avoidance of the hair and dander of cattle, weekly inoculations of cattle hair extract were begun on May 19, 1931, with a dose of 0.1 cc. of a 1:100,000 dilution. These were continued weekly with increasing doses, the last dose, 0.9 cc. of a dilution of 1:500 being given eight months later, on January 22, 1932.

The results were surprising. As the dose of cattle hair increased, not only were the asthmatic attacks relieved, but the epileptic seizures became less and less frequent, and in November, 1931, ceased entirely. Since then the child has been quite well, and has had neither attacks of asthma nor epileptic convulsions.

CASE 2—B W, born in 1916. An only child. Cesarean birth. Nursed 4 months, then given cows' milk and dextrimaltose. At the age of eighteen months she had facial eczema. She

refused to eat eggs. She had numerous colds and stomach upsets. She had frequent attacks of croup. At 5 years, she had pneumonia. Since she was three years of age, she has had hay fever every fall, sometimes followed by asthma. She had ragweed injections at 10 years of age with some improvement. At that time skin tests showed her sensitive to spinach, onions, rice, and corn.

Since she was 4 years of age she has had digestive upsets, constipation, and recurrent attacks of mucous colitis requiring weekly irrigations. At 11 she was given a set of gastro-intestinal x-rays. The roentgenologist stated that she had "a spot on her spine." Though she had no spinal symptoms, she was put in braces and was under the care of Dr. Goldthwait for 4 months.

Her epileptic attacks date from the age of 10 years. During the succeeding nine years, she has had convulsions varying from once a month to once every three months. They always occurred in bed. She has fallen out of bed and bitten her tongue. The patient was a chronic invalid.

Owing to the extensive allergic history, 186 skin tests were made by the scratch method with the following results: 4+ to goldenrod, 3+ to banana and asparagus, 2+ to giant and short ragweed, dahlia, dandelion, cabbage, corn, garlic, onion and potato, and 1+ to orris root, pyrethrum, tobacco, coffee, buckwheat, beet, and the pollen of mugwort and sunflower. Suspicious, but not definitely positive reactions were given to tea, barley, flaxseed, oats, grapefruit, rhubarb, spinach, and almond.

A rigid diet was ordered and on March 4, 1933, inoculations with giant and short ragweed, goldenrod, and dandelion were started and continued until August.

The result has been that the patient, last summer had the first autumn without hay fever in fifteen years, and is much improved in regard to her intestinal condition. The only convulsion she has had in the past fourteen months was last autumn when, after driving for two days on her return from her summer home in Rhode Island and eating at restaurants where her dietary régime was probably somewhat lax, she had one mild attack. She says that for the first time in her life, she considers herself to be well.

The author has recently been given the opportunity to investigate the allergic status of the epileptic cases at the Utica and the Marcy State Hospitals. This study has only just begun and will be reported in full later. In passing, however, it is of interest to note that of the first 10 cases studied, one patient gave four 2+ and one 1+ reactions. One gave twenty 1+ reactions, one gave three 1+ reactions, 2 gave two 1+ reactions, and one gave one 1+ reaction. These all gave variable numbers of +, or suspicious reactions. Of the three who did not give definitely positive reactions, one gave one that was suspicious. The other two were quite negative. Each case was given scratch tests with 164

allergens. Thus, in this brief series of psychopathic epileptics, it will be seen that 70 per cent gave evidence of allergic susceptibility.

From a review of the literature and from personal experience, the author believes that there is evidence of a close relation between allergy and not only migraine, but epilepsy as well.

Theoretically an acute allergic edema of the brain can explain all the symptoms of the two diseases.

Cases of epilepsy, as well as migraine, give a disproportionately large percentage of positive skin reactions, showing their hypersensitivity to certain foods or environmental influences.

In many cases the attacks have ceased when the offending proteins have been removed, and in some have been made to recur by returning these to the diet or environment. Desensitization by specific protein inoculations has been followed by complete recovery.

While epilepsy may also be caused by various pathological conditions as trauma, arteriosclerosis, or endocrine disfunctions, there is sufficient evidence that some of the cases are of allergic origin to warrant a careful study of the food and other idiosyncrasies of every case of epilepsy.

It is well within the range of possibility that a study of the allergic idiosyncrasies of cases of infantile convulsions, and the regulation of the diet in accordance therewith may, in certain cases, prevent the onset of epilepsy in later years.

Where an epileptic patient gives a family history of allergy, or shows some other allergic manifestations himself, such a study is especially indicated.

If such studies can relieve but a small percentage of the unhappy sufferers from this tragic affliction, the time devoted to making the investigations will be indeed well spent.

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## SUPERSTITION DIES HARD

It would seem well-nigh incredible if it were not related first hand by the editor of the *Mental Hygiene News*, published in Utica. An earnest visitor, it appears, called at the office of the State Department of Mental Hygiene and wished to take an insane patient with him, accompanied by a doctor and two attendants, for two or three hours. After some discussion, his method was disclosed. The patient was to be tied to an evergreen tree, his hair and nails were to be cut off, a cavity was to be made in the tree and the hair and nails inserted and sealed away from bees, bugs, etc. Cure was to come forthwith. The visitor said it was an experiment, which he had never tried, although he got the directions from a very old book, older than the Bible.

A colleague tells of a similar kind of "hair magic." An old Dutch family took precautions against scrofula, as follows. They cut some hair from the head of the boy who was to be protected, bored a hole in a hickory tree and sealed

it in. The brother says, "Well, Jim is safe against scrofula, anyhow."

The ideas behind both of these practices were somewhat similar and were consistent with the laws of primitive magic. According to magic, the hair and nails will grow after death and so must be the vital part of man. They gave added vitality from a growing evergreen tree—evergreen being a symbol of vitality and life, now as in the primitive days of tree worship. So the psychotic patient was to be helped by this form of magic. If part of him were revitalized, it would help his whole being.

The visitor, a plam, uneducated immigrant, had come to this country as a child. He was uneducated rather than unintelligent. He appreciated the invigorating value of the evergreen and the vital nature of hair and nails. He had a few other remedies from no one knows where. He believed in these remedies and with them he wished to help mankind. Magic never dies.

## "PLAYING THE DOCTORS FOR SUCKERS"

That is the title of an editorial in a medical journal written by a doctor who had just received a circular letter from a soap concern asking the name of the soap he advised his patients to use. It reminded him of a certain famous dermatologist, a member of very high class societies, who wrote a testimonial for a certain soap. His colleagues called him to the bar of judgment. He was pronounced guilty of unethical conduct, and sentenced to one year's suspension. This occurred within the past two or three years.

A certain tobacco firm presented a large number of doctors with a carton containing 100 cigarettes. The wise ones smoked them or gave them away. The polite ones sent very nice letters of thanks. Imagine the surprise of the latter group to find themselves publicly listed as users. What could they say in protest?

A great baking company appreciating the value of the doctors' good will and friendship sent out many coupon orders, each one of which entitled the holder to one loaf of the wonderful

bread made by the company. The doctor was supposed to distribute these among his patients, who in turn presented them to their regular grocer. We doubt if many of these were used, as the profession had already been "wised up" by the "adventure in cigarettes."

Prescribing a dog is a bit uncommon. A doctor who writes in *The Hahnemannian Monthly* recalls meeting a man who introduced him to his son, a manly youth. "Doctor, here is your old patient, you cured him." "What was the matter with him?" "I do not know what you thought, but you told me to take him out of school and buy him a dog." The case record showed that the boy had an indefinite nervous complex aggravated by study. He lived in a neighborhood infested by young "hoodlums." Taking the boy from school was an obvious necessity, but was subject to the disadvantage of exposing the boy to bad companionship. Hence the suggestion to buy the dog.

# THE PROGRAM OF THE DIVISION OF CANCER CONTROL OF THE NEW YORK STATE DEPARTMENT OF HEALTH

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*Buffalo*

On May 1, 1930, Governor Roosevelt appointed a Special Health Commission to study and report to him concerning the administrative and legislative aspects of public health in New York State, and to submit any recommendations which the Commission believed would be of value in improving health conditions by better utilization of existing knowledge in regard to the cause, prevention, and cure of disease.

The Commission consisted of fourteen members, eight of whom were doctors of medicine. Each member was assigned a particular aspect of the problem and was allowed to form a committee chosen by himself, of persons outside the Commission, who had special knowledge of the subject. Dr. George W. Cottis of Jamestown was asked to study the cancer problem and he appointed the following physicians to work with him on his Committee: James Ewing, Howard C. Taylor, Francis C. Wood and Burton T. Simpson.

The Committee agreed that cancer has become a major public health problem because it is responsible for 10 per cent of all deaths, many of which are preventable.

In New York State, in 1900, cancer ranked eighth among the principal causes of death and accounted for 4.2 per cent of all deaths. In 1929, it ranked second, and accounted for 10.3 per cent of all deaths.

The Cancer Committee made the following recommendations to the Commission:

That there be created in the State Department of Health, a division of cancer control.

That the State and local departments of health promote the establishment of more adequate facilities for the diagnosis and treatment of cancer, including hospital care and diagnostic tumor clinics, with properly qualified physicians in charge and an adequate follow-up service.

That qualifications for pathologists engaged in tumor diagnosis and standards for pathological laboratories be prescribed by the Public Health Council, in a manner similar to the system in effect for Public Health Laboratories.

That the State Department of Health continue and extend its efforts to educate the public regarding cancer and that

voluntary associations carry out a more aggressive educational campaign in this field.

That the State division of cancer control affect a working relationship with the committee of the Medical Society of the State of New York which is sponsoring the postgraduate instruction of physicians, to develop greater knowledge and increased interest on the part of the profession in the early diagnosis and treatment of cancer.

The Legislature took definite action upon some of these recommendations. In April, 1931, the State Legislature passed a bill amending the Public Health Law, whereby there was created in the State Department of Health, a division of cancer control of which the State Institute for the Study of Malignant Diseases shall be a part. The director of the State Institute was appointed director of the division and Dr. Louis C. Kress was made assistant director.

With the approval of Commissioner Parran, the following outline of activities was adopted.

(1) A general survey of cancer distribution throughout the area of upper New York.

(2) A survey of existing facilities for the diagnosis and treatment of the cancer patient in the same area.

(3) The stimulation of the organization of diagnostic tumor clinics, and where facilities are available, treatment clinics in general hospitals.

(4) Contacts with the medical profession consisting of lectures and demonstrations before county medical societies, medical clubs, and senior medical students, teaching clinics at the Institute and personal contacts.

(5) Lay education by means of talks before civic, men and women's clubs, and other organizations, radio talks, newspaper publicity, etc.

It occurred to the author that it would be of value to discuss the program of the Division of Cancer Control and by so doing we might bring out information that would be of mutual benefit. In commenting upon the activities outlined above, it was thought desirable to make a general survey of the distribution of the incidence

of cancer throughout the State in order that we may obtain data to guide us in the establishment of facilities for the diagnosis and treatment of cancer at strategic points.

Unfortunately, no cancer morbidity figures are generally available as cancer is not a reportable disease. From the fact that the average length of life of a cancer patient is estimated as three years, it has been customary to multiply the annual deaths from this disease by three and thus roughly estimate the number of living cases of cancer.

Based upon this method there are approximately 50,000 persons suffering from cancer at all times in New York State. While we do not believe that there is such a thing as "cancer houses," we are inclined to believe from our observation that cancer is more prevalent in certain localities than in others. In any event, the facilities for the efficient diagnosis and treatment of cancer are not at this moment equally distributed.

At the present time complete tumor clinics are established and working efficiently at Buffalo, Rochester, and Albany. Diagnostic tumor clinics are being conducted at Watertown, Troy, Kingston, and Middletown. It is conceded to-day that the proper diagnosis and treatment of cancer is a group proposition and that this group should be composed fundamentally of a clinician, a surgeon, a radiologist, and a pathologist.

These clinics should be organized in connection with general hospitals, and while it is not the intention of the State to finance the clinics in any manner, the division of cancer control offers its aid in the organization of tumor clinics and the cooperation of the State Institute as a teaching and consultation center.

The necessity of the establishment of tumor clinics was recognized by the American College of Surgeons. This organization appointed a committee to study the problem and to make recommendations. The report of this committee may be found in *Surgery, Gynecology and Obstetrics*, Vol. 51, 1930. Among the recommendations was one concerning cancer clinics in general hospitals. Quoting from the report:

"The reason for the organization of these special cancer clinics is primarily the fact that the field of cancer diagnosis and cancer treatment has developed so widely in the past few years that only by the organization of a group of representatives of the different departments of the hospital, can the full resources available at the

present day for the treatment of cancer be made accessible to the individual patient. Many general hospitals are equipped with the material and apparatus needed for the treatment of cancer, including high voltage x-ray and a sufficient amount of radium, but a separate organization is required to make this equipment available for the cancer patient and to secure the necessary consultation and cooperation from the different members of the hospital staff who are interested and competent in this field."

However, the committee realized that many general hospitals did not have the facilities for radiation therapy and in such instances recommended that there be organized a diagnostic tumor clinic to provide better diagnoses upon cancer patients, to furnish group judgment concerning the proper means of therapy to be employed and to educate the medical public concerning this important group of diseases.

It was not the intention of the committee that every hospital in the community establish a tumor clinic but rather that the facilities and personnel be pooled and that by so doing, one good clinic could be maintained. In this way a larger number and variety of cancer patients could be studied.

From our many years of experience in maintaining and conducting a cancer clinic, we are in a position to be of service to any hospital or group contemplating the organization of a tumor clinic. There are many communities in upper New York State which are still without this much needed service. We shall be very glad to communicate with and give our cooperation in the establishment of clinics.

At the present time the only reliable methods we have for the treatment of cancer are surgery and radiation. These methods are efficient if the cancer is diagnosed and treated soon after its inception. Unfortunately, because of the absence of pain and discomfort in the early stages of this disease, many persons neglect those other signs and symptoms which are nearly always present and the disease becomes advanced before proper attention is given it. It is clear, therefore, that if we are to obtain better results in the control of cancer, we must spread the available knowledge to everyone concerned in the problem.

It has been said that if every doctor, dentist, nurse, and the general public, knew what he or she should know of the available knowledge concerning cancer, the mortality could be reduced 50 per cent. It is the aim of the division of cancer control to contribute its full share to realize this desirable accomplishment.

Since the American Society for the Control of Cancer is carrying on an intensive

drive in the State for the education of the lay public, it is not deemed advisable at this time, to make this phase of the program a major activity but to concentrate our energies along other lines. However, lay education will be conducted where needed and in such a manner as not to duplicate the work of other agencies.

Because of the limited number of cancer cases with which the practicing physician comes in contact, the subject of cancer is not of such great importance with him as contrasted with his other activities. The newer aspects of this disease are therefore overlooked or neglected by the average doctor. If we are to control cancer, everyone interested in the problem must do his share. Therefore we included medical education in our program as one of our major activities. From our standpoint this should include not only the practicing physicians, but also the senior medical students, the dentists, and members of the nursing profession.

One of the most obvious methods of reaching the general practitioner is through the county medical society. We are fortunate in having the backing and cooperation of the Committee on Public Health and Medical Education of the State Medical Society. This committee, of which Dr. Thomas P. Farmer is chairman, has recommended that each county society devote one meeting every year to the consideration of the cancer problem. The Division of Cancer Control has speakers available who are in active cancer work and who are conversant with the most recent knowledge regarding this subject. Demonstrations and illustrated talks have been especially prepared to present the subject of cancer control to the best advantage for the practicing physician. An idea of the character of some of our demonstrations may be obtained by visiting the scientific exhibit. These talks are not limited to county medical societies but are available to medical clubs, hospital staffs, or any group of medical men. Facilities are offered at the State Institute for physicians to acquire a knowledge of the diagnosis of cancer and its treatment by radiation therapy.

Pathologists are invited to come to our pathological laboratory to perfect themselves in the histological diagnosis of tumors. Because of recent advances in our knowledge of tumor diagnosis, the pathologist can no longer discharge his obligation by simply making a report of sarcoma or carcinoma but must be prepared to give an

opinion upon the grade of malignancy and the degree of radiosensitivity. The abundance of pathological material which reaches our laboratory each day in connection with our free diagnostic service to the physicians of the state offers an excellent opportunity for extensive study. Pathologists who are not familiar with the best method of rapid preparation of frozen sections could well devote a little time in observing our technic.

Cancer in and about the mouth is a rather common occurrence. Bloodgood has said that cancer of the mouth is a preventable disease. It is therefore important that the dentist, who has such excellent opportunity to observe precancerous and early cancerous lesions in this location, be made to realize his responsibility in the control of cancer. We are offering suitable demonstrations and are also prepared to furnish speakers to present the subject before dental societies. At the Institute we are giving regular clinics for dental students.

We believe that the senior medical student is the most fertile soil in which to implant the seed of cancer control. We have made no marked advance with the control of tuberculosis until the early signs of this disease were taught to the medical student. We are urging the deans of the medical schools to establish a definite course in cancer control. When we consider that cancer ranks second as the cause of all deaths, we cannot help but realize that this disease demands definite recognition in the curriculum of the medical college.

At the University of Buffalo such a course has been in operation for several years under the Department of Preventive Medicine. We feel sure that the ultimate results obtained from this course will offset any argument relating to an overcrowded curriculum.

Nurses have a great opportunity and also a responsibility in regard to cancer control. We are advocating instruction in this subject to schools of nursing and are prepared to offer appropriate talks to nurses' organizations.

The State of New York is primarily interested in the welfare of its citizens. The cure and prevention of disease is in the hands of the medical profession. Therefore, the state is ready to be of help in any way to the medical profession which will reflect to the benefit of the people of the state.

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## EDITORIALS

### Anent Malpractice Suits

Although the current century has witnessed a striking rise in the average level of medical skill, paradoxically enough there has been a tremendous increase in the amount of malpractice litigation in the same period. This is due in part to a more explicit codification of the rights and duties of the physician; in part to a growing tendency on the part of the public to evade its financial obligations to the medical profession.

Our Society provides members with a twofold protection. First, they have malpractice defense, and secondly, they have a group insurance against damages which they might incur as a result of malpractice suits. To us the problem of malpractice litigation is so grave a concern that at the last session of the House of Delegates the matter was under consideration. Epitomized in a resolution, the action of the House of Delegates was to the effect that all of us shall use our best influences to discourage or prevent suits or claims against members, *except when in our best judgment such suits or claims are founded in fact upon injury to patients caused by clear negligence.*

In the summation of one's opinions and judgment, it should be remembered that the physician or surgeon who undertakes a

case impliedly represents himself as one possessing that degree of learning and skill ordinarily possessed by practitioners in his locality; and that he will use reasonable care and diligence in the exercise of such skill and learning to accomplish the purpose for which he is employed.

The law does not require that the practitioner shall be possessed of that extraordinary skill and learning which are possessed by the few, but only that general competence possessed by the average. No physician or surgeon is liable for a mere error of judgment provided he has used his best judgment. Reputable physicians and surgeons do not guarantee cures, and there is no presumption of negligence or lack of care merely because there has been an error of judgment in diagnosis or treatment, or because the particular physician or surgeon has been unsuccessful or has failed to procure a result which another physician or surgeon might have procured.

In the observation of many cases in which litigation has started, it becomes apparent that a chance remark, an unpremeditated criticism has started a patient on the road to the courts. It behooves us, therefore, to be circumspect in our conduct, lest unwittingly we become agents in harming our colleagues. Very often, when tempted to criticize, resort to conference with the physician who was in prior attendance upon the case changes the patient's story and invalidates the criticism.

Finally, to remove another factor which conceivably might influence malpractice litigation, the House of Delegates has ruled that *"no member of this Society shall make a charge or receive any compensation for his services based upon the outcome of any malpractice suit or claim in which he shall appear as a witness."*

Let us be sure that the physician violated some duty which he owed his patient, which in itself produced the results of which complaint is made, let us make sure that the patient himself was free from any fault or neglect which might have induced his present plight, and let us so act in the consulting room, that casual comment cannot be mistaken. Before all, let us not make any patient feel that only we, ourselves, could have been his medical savior.

drive in the State for the education of the lay public, it is not deemed advisable at this time, to make this phase of the program a major activity but to concentrate our energies along other lines. However, lay education will be conducted where needed and in such a manner as not to duplicate the work of other agencies.

Because of the limited number of cancer cases with which the practicing physician comes in contact, the subject of cancer is not of such great importance with him as contrasted with his other activities. The newer aspects of this disease are therefore overlooked or neglected by the average doctor. If we are to control cancer, everyone interested in the problem must do his share. Therefore we included medical education in our program as one of our major activities. From our standpoint this should include not only the practicing physicians, but also the senior medical students, the dentists, and members of the nursing profession.

One of the most obvious methods of reaching the general practitioner is through the county medical society. We are fortunate in having the backing and cooperation of the Committee on Public Health and Medical Education of the State Medical Society. This committee, of which Dr. Thomas P. Farmer is chairman, has recommended that each county society devote one meeting every year to the consideration of the cancer problem. The Division of Cancer Control has speakers available who are in active cancer work and who are conversant with the most recent knowledge regarding this subject. Demonstrations and illustrated talks have been especially prepared to present the subject of cancer control to the best advantage for the practicing physician. An idea of the character of some of our demonstrations may be obtained by visiting the scientific exhibit. These talks are not limited to county medical societies but are available to medical clubs, hospital staffs, or any group of medical men. Facilities are offered at the State Institute for physicians to acquire a knowledge of the diagnosis of cancer and its treatment by radiation therapy.

Pathologists are invited to come to our pathological laboratory to perfect themselves in the histological diagnosis of tumors. Because of recent advances in our knowledge of tumor diagnosis, the pathologist can no longer discharge his obligation by simply making a report of sarcoma or carcinoma but must be prepared to give an

opinion upon the grade of malignancy and the degree of radiosensitivity. The abundance of pathological material which reaches our laboratory each day in connection with our free diagnostic service to the physicians of the state offers an excellent opportunity for extensive study. Pathologists who are not familiar with the best method of rapid preparation of frozen sections could well devote a little time in observing our technic.

Cancer in and about the mouth is a rather common occurrence. Bloodgood has said that cancer of the mouth is a preventable disease. It is therefore important that the dentist, who has such excellent opportunity to observe precancerous and early cancerous lesions in this location, be made to realize his responsibility in the control of cancer. We are offering suitable demonstrations and are also prepared to furnish speakers to present the subject before dental societies. At the Institute we are giving regular clinics for dental students.

We believe that the senior medical student is the most fertile soil in which to implant the seed of cancer control. We have made no marked advance with the control of tuberculosis until the early signs of this disease were taught to the medical student. We are urging the deans of the medical schools to establish a definite course in cancer control. When we consider that cancer ranks second as the cause of all deaths, we cannot help but realize that this disease demands definite recognition in the curriculum of the medical college.

At the University of Buffalo such a course has been in operation for several years under the Department of Preventive Medicine. We feel sure that the ultimate results obtained from this course will offset any argument relating to an overcrowded curriculum.

Nurses have a great opportunity and also a responsibility in regard to cancer control. We are advocating instruction in this subject to schools of nursing and are prepared to offer appropriate talks to nurses' organizations.

The State of New York is primarily interested in the welfare of its citizens. The cure and prevention of disease is in the hands of the medical profession. Therefore, the state is ready to be of help in any way to the medical profession which will reflect to the benefit of the people of the state.

population over 40 years of age are completely disabled by chronic maladies, and, not counting the victims of tuberculosis and mental disease, over 0.3 per cent are receiving some care from medical or social agencies because of incapacity due to chronic illness.

To meet this unfortunate situation, the Committee recommends, for one thing, a modern hospital in New York City for chronic diseases. No less than 20 per cent of the beds of general hospitals, it appears are now used for victims of chronic illness, and "most of these could be treated more economically and with better results" in such a special institution. The only provision now made by the city for the chronic sick are Neurological Hospital, Cancer Institute, and the chronic wards in three other hospitals, "all of which are inadequate for this purpose."

We all know only too well how often the best solution of a problem meets a snag because it turns out to be against some rule or regulation. Well, it happens again here. The committee believes that "many of the chronically ill could be cared for just as well at home and would be happier there." Home care, indeed, "is not only more humane for many patients, but it is also much more economical than institutional provision." And what is more, a survey shows that four-fifths of the patients living at home do not need institutional care, several hundred patients in general hospitals might be taken care of at home, and undoubtedly more in other institutions could be at home. Here, however, we strike the snag. The city provides at present only institutional care for the chronic sick, because home care paid for out of public funds is not permitted under the city charter. Besides, the committee remarks sagely, "one question to be met is whether a system of home care free from political abuse can be conducted in a city the size of New York." The committee certainly "said something" when they said that.

At any rate, the anomalous condition of this unfortunate group is now squarely in the limelight, and we may expect that something will be done to remedy it. The committee is composed of the kind of people who get things accomplished, they

have given their findings and recommendations to Commissioner Goldwater, who has the same excellent trait, and their ideas and plans have been endorsed by the New York Academy of Medicine, the United Hospital Fund, the New York City Visiting Committee of the State Charities Aid Association, and the Executive Committee of the Welfare Council of New York City.

Probably very few, if any, of the indigent chronic sick themselves have the faintest idea of all this effort going on far over their heads to better their care. Some day they will merely find that they are more comfortable, that they are in a fine new building, with medical and nursing attention that is better suited to them. It may very likely happen that not one of the committee who are working to bring this about will ever receive a word of thanks from these unfortunates whose burden of illness is made a bit lighter, a bit more endurable. But the workers are not looking for thanks. If the days of pain are eased, that is reward enough. And the weight of power back of this plan seems to indicate that the happy result is not far away.

### Worse than the Great Plagues

When we cure one evil, another appears. We defeat death in one form; he comes back in a different guise. We blot out cholera, yellow fever, and plague, only to see heart disease, cancer, pneumonia, and nephritis claim their hundreds of thousands. Able men are battling these diseases, and it is not beyond possibility that the future may see them conquered.

But while we are fighting these foes of the human race, man himself is devising new dangers that threaten his own life. Man's enemy has always been man, to some extent, but never has his peril reached the height where it is now. Our mechanized civilization is destroying its tens and hundreds of thousands and leaving a wake of crippled and disabled victims as a sad legacy for the physician and surgeon to patch up. Man's own machines have become Franksteins to turn and slay him.

We shudder at the great plagues that ravaged the populations of the Middle Ages, but a speaker at the recent annual meeting of the Massachusetts Medical Society re-

marked that the mechanical monsters of to-day are "far more perilous than all the plagues of the past." It is a bit disheartening to the earnest and devoted physician whose life is dedicated to the war on disease, to see the seeming public indifference to the continuous slaughter that goes on, year in and year out, on the highway and among the whirling wheels in the factory.

What makes this subject timely just now is the fact that the mortality reports coming into the home office of the Metropolitan Life Insurance Company indicate that more people were killed by automobiles in the first three months of 1934 than in the same period of any previous year. The automobile death rate, indeed, is almost 20 per cent higher than last year, and 8 per cent higher than it was in 1931, the previous high year. And, moreover, the added victims seem to be the little folks, for so far this year the automobile fatality rate among children is 26 per cent above last year's mark. In the last ten years it seems that over 275,000 persons have been killed by automobiles, and in the last four years nearly 4,000,000 have been injured. This contrasts sharply with the 50,000 American soldiers who were killed or died of wounds in the World War.

It was pointed out in the paper read before the Massachusetts Medical Society by Dr. Lincoln Davis that the Census Bureau figures for 1929 show over 94,000 deaths from all forms of accidents, over 16,000 suicides, and nearly 10,000 homicides, a total of 120,000 violent deaths. Heart disease, with its toll of 245,000 lives, is the only greater cause of death. Next comes cancer, with 111,000 victims and pneumonia and nephritis with 106,000 each. Where are the great epidemic scourges of the past? In 1929 only 151 persons died of smallpox, 19 of typhus, none of plague, none of yellow fever, none of cholera.

Here, then, we have a formidable peril to mankind, caused by—man himself. No germicide, no vaccine will reach it. The cause is social, the cure must be social. But if the cause is not medical, the effect is, and it is felt immediately when the hurry call summons the physician to the victim's bedside. So the doctor has a

double interest. He has a right to protest as a health guardian against this continuous wrecking of humanity, this breaking of bodies upon the wheels of pleasure and industry, and he has a right as a man, a citizen, to call a halt on a reckless waste of human life that makes war seem like a comparatively safe pastime.

More and more the doctor's horizons are broadening, and his field is extending to take in larger areas of human life. The health of his people is conditioned by everything that touches their welfare. He can say with the old Roman, "Nothing human is alien to me." Here is something that may well engage his concern.

### THE BUDGET

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Rent .....	\$2,600.00
Telephone .....	200.00
Postage .....	500.00
Stationery and Printing.....	1,000.00
Salaries .....	18,600.00
Contingent Fund .....	1,500.00
Annual Meeting—Printing, Postage, and Stenographer for House of Delegates	2,500.00
Printing District Branch Programs, and postage for mailing paid through Secretary's office .....	800.00
Auditor .....	500.00
Traveling Expenses—General, including President and Secretary.....	3,000.00
Traveling Expenses, A.M.A. Delegates.	1,500.00
Counsel—Salary .....	12,000.00
Counsel—Expenses .....	500.00
Secretary—Honorarium .....	3,000.00
Secretary—Expenses .....	600.00
Executive Officer's Salary.....	8,000.00
Executive Officer's Expenses.....	900.00
<i>Standing Committees</i>	
Legislation .....	6,000.00
Economics .....	3,500.00
Public Health and Medical Education..	5,500.00
Public Relations .....	2,000.00
Scientific Work .....	500.00
<i>Special Committees</i>	
Medical Research .....	300.00
Trends in Medical Practice.....	500.00
<i>District Branches</i>	
For Annual Meeting as allowed under the By-Laws .....	1,600.00
<i>Special Appropriations</i>	
Conference of County Secretaries.....	500.00
Conference Executive Committees, District Branches .....	200.00
Christmas Bonus .....	500.00
<i>Journal</i>	
Thomas R. Gardiner—Printing, Publication, etc., per member.....	.50
Journal Management Committee, per member .....	.40
<i>Directory</i>	
Printing Directory .....	12,000.00
Wrapping and Delivery.....	1,700.00
Postage .....	1,000.00
Stationery, Printing, and Expenses....	500.00



# Medicolegal

LORENZ J. BROSNAN, ESQ.  
Counsel, Medical Society of the State of New York

## Death Action—Physician's Responsibility

A case which very well illustrates the nature of the legal responsibility of a physician for the death of a patient was recently decided in one of the Southern States. The facts of the case must be detailed at some considerable length for an understanding of the decision.

The explosion of a lamp caused severe burns to one S, and he was taken to a certain sanatorium to receive treatment. He came under the care of a certain Dr. H. The doctor found that the burns covered at least 60 per cent of his entire body and that they were, in the main, second and third degree burns. The most serious were on his abdomen, chest and side. Apparently while at the sanatorium the patient was in great pain, became delirious, and made a great deal of noise, causing considerable disturbance and occasioning discomfort to other patients in the sanatorium.

After S had been under his care for a week, Dr. H. made a trip to a neighboring town and consulted with a Dr. C. who was in charge of an insane asylum with a view to having the patient transferred to that institution. A full history was given to Dr. C., including the nature and extent of the patient's burns, and the delirious mental condition. Dr. C. was of the opinion that the patient was not legally insane, but expressed the feeling that his institution was better equipped to care for S than the sanatorium. He told Dr. H. that he would be glad to arrange to receive the patient if Dr. H. could secure proper commitment papers from the County judge. Dr. H. then consulted the County judge and was told that the patient should be brought before medical examiners in his town before the question of commitment could be decided.

Dr. H. thereupon returned to the sanatorium, and sent the patient in an ambulance accompanied by nurses to be passed upon by the medical examiners. They, however, reported that S was not insane, but simply delirious from pain as a result of his burns, and on their report the judge declined to issue the necessary papers committing the patient to the State institution.

The ambulance driver, however, proceeded on with the patient to the asylum. Dr. C. at the said institution refused to receive him without the required papers, and nothing was done for the patient there except that a hypodermic of morphine was given him to alleviate his pain. The driver then, upon instructions from Dr. H., brought the patient back to the sanatorium, and he returned to the care of Dr. H.

About four days after the futile trip, the patient developed hypostatic pneumonia, and died a few days later. The cause of death given at the sanatorium was the burns together with the pneumonia.

An action was thereafter brought on behalf of the widow and children of the deceased against the sanatorium and Dr. H. to recover for damages sustained as a result of the alleged improper handling of the case.

Upon the trial the plaintiffs introduced a considerable amount of testimony to the effect that the unfortunate ambulance ride had been made at a reckless, high speed over rough roads. Said testimony was controverted by the nurses and the driver, and it was further brought out that the ambulance was of the most modern type and was well equipped with all devices for the safety and comfort of a patient riding therein.

Two doctors called by the plaintiffs testified that the trip could not have been good for the patient, and that it could have resulted in pneumonia developing. However, those doctors on cross examination testified that it would be lobar pneumonia that would so result, and which would develop between twenty-four hours and a maximum of seventy-two hours after the ride. The uncontroverted testimony on behalf of the defendants was that the type of pneumonia that actually developed was hypostatic, and that that was the result of the patient having to lie in one position an unusual length of time, and from bad circulation and bad heart action as the result of the burns.

The proof in the case failed to establish any responsibility on the part of the sanatorium and the trial court directed a

marked that the mechanical monsters of to-day are "far more perilous than all the plagues of the past." It is a bit disheartening to the earnest and devoted physician whose life is dedicated to the war on disease, to see the seeming public indifference to the continuous slaughter that goes on, year in and year out, on the highway and among the whirling wheels in the factory.

What makes this subject timely just now is the fact that the mortality reports coming into the home office of the Metropolitan Life Insurance Company indicate that more people were killed by automobiles in the first three months of 1934 than in the same period of any previous year. The automobile death rate, indeed, is almost 20 per cent higher than last year, and 8 per cent higher than it was in 1931, the previous high year. And, moreover, the added victims seem to be the little folks, for so far this year the automobile fatality rate among children is 26 per cent above last year's mark. In the last ten years it seems that over 275,000 persons have been killed by automobiles, and in the last four years nearly 4,000,000 have been injured. This contrasts sharply with the 50,000 American soldiers who were killed or died of wounds in the World War.

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Wrapping and Delivery.....	1,700.00
Postage .....	1,000.00
Stationery, Printing, and Expenses.....	500.00

on, and treated the man thereafter for burns. Subsequent thereto an action was brought against the doctor charging him with having been responsible for the burns which the patient sustained. The action came on for trial and plaintiff testified in court that after the doctor had finished bandaging the arm he took a colorless liquid and poured it over the entire bandage and failed to caution him that the bandage was inflammable. He claimed that the entire bandage, upon lighting his cigaret, went up in flames resulting in severe and serious burns to both hands.

At the close of all the testimony the trial judge directed a verdict in favor of the defendant, thereby exonerating him from all responsibility for the burns which the plaintiff sustained.

### Claimed Failure to Detect Glaucoma

A middle-aged man consulted a physician specializing in eye, ear, nose, and throat work, complaining that his glasses were not suitable for his eyes. The doctor made a thorough test of his eyes and found that the patient at 15 ft. distance with slight correction was able to read the doctor's chart properly. He found the patient's near vision to be perfect.

The doctor's examination of the patient also consisted in the use of the ophthalmoscope and tonometer. Light tests indicated that the patient's pupils were normal, and further tests showed that his field of vision was normal. The doctor prescribed proper glasses for the patient and he never saw him thereafter.

A malpractice action was instituted against the doctor in which the claim was made that the doctor failed to properly examine the patient's eyes and that he failed to detect that the patient was suffering from glaucoma in both eyes, and that as a result of the doctor's failing to detect said condition, which it is claimed could have been corrected at that time, the plaintiff claimed to have completely lost the use of his left eye and that the sight of his right eye had become greatly impaired. The plaintiff further claimed that as a result of the negligence of the defendant, eventually he would lose the sight of both eyes, and that in all probability both eyes would have to be removed.

Upon the trial of the case before a judge and a jury, the plaintiff introduced the testimony of an optometrist who claimed that

he examined the plaintiff at about the same time that the defendant had done so, and at that time he found definite cupping of the optic nerve, hardness of the eyeballs, complaints of steam before the eyes and rainbow-like rings around lights. The optometrist claimed that he made a diagnosis of glaucoma. The defendant, on the other hand, testified that at his examination there were no symptoms of glaucoma, and that the man made no complaints compatible with glaucoma. The plaintiff himself testified that about nine months after he had consulted the defendant, he woke up one morning to find that he was blind in one eye and suffering intense pain, and that he consulted another specialist who treated him for glaucoma.

The case was sent to the jury and a verdict rendered in favor of the defendant doctor, thereby exonerating the doctor from all charges of malpractice, and rejecting the proof offered by the plaintiff and his witnesses.

### Failure to Determine Presence of Particle of Glass

A general practitioner was called to the home of a young man about 20 years of age, and he found the patient lying upon his stomach on the sofa with a bleeding wound in his buttocks.

The doctor was given the history that the patient had received the injury by falling on a glass bottle. He found a laceration about an inch long, but not particularly deep in the buttocks close to the rectum, but not involving the rectum. The doctor made a careful examination with his fingers and with forceps to find whether any particles of glass remained in the wound; but he did not find any such particles. He cleaned out the wound and drew the edges together and applied two sutures. He dressed the wound with a pad held with adhesive strips. He saw the patient and redressed the wound on several occasions, and the wound healed very well. About three weeks after he first had seen the patient, the patient came into his office complaining of soreness where the sutures had been. The doctor examined him and found a hard lump under the skin which he decided was probably a piece of glass that he had been unable to detect. He referred the patient to the accident ward of a nearby hospital for surgical treatment.

verdict in its favor. However, on the state of the proof set forth above, the case was sent to the jury, and a verdict was rendered in favor of the plaintiffs against Dr. H. Appeals were taken by both parties from the judgment of the trial court, with the result that the decision dismissing the case against the sanatorium was affirmed, and the judgment against the doctor was reversed and the case ordered dismissed as to him as well.

The Appellate Court, so far as concerned the sanatorium, readily found that its duty was simply that of providing a room and meals and nursing; but that it was under no duty to provide medical or surgical treatment to the deceased and that it could therefore not be held to responsibility for any acts of Dr. H. as the doctor in charge of the case.

After considering the case as to Dr. H., the Appellate Court came to the conclusion that the plaintiffs had failed to establish their burden of proof. They were bound to prove, not merely that the negligence of the defendant doctor had injured the patient, or added to his suffering, but with certainty that his negligence had caused the death of the patient. In deciding that the doctor had not been shown to be responsible for the death, the Court said:

"We have made a careful search of all the evidence contained in the record to discover if there is any conflict in the evidence as to whether or not the plaintiff's intestate's death was caused by the trip which the patient took in the ambulance from J. to the ..... Hospital for the Insane and return . . . . There is some evidence in the record to the effect that the patient suffered more or less pain from the jolting of the ambulance, and according to the evidence of two of the witnesses who were in the ambulance on the trip with the patient, the patient showed evidences of suffering; and that the ambulance was driven in a reckless way and manner, and the patient was jolted considerably, and the burns were caused to crack open and to exude bloody water, and that the patient was partly conscious of the pain at times, although for the greater portion of the time the patient was delirious. However, there is no evidence in the record that this trip could have resulted in the patient developing hypostatic pneumonia. The nearest suggestion of the trip resulting in pneumonia is the evidence of Dr. D. and Dr. C. Both these doctors admitted that the trip would not have caused pneumonia of the type known as hypostatic. The evidence in the record is undisputed that the patient died on account of the serious burns and the effects of the burns and of hypostatic pneumonia. We are also of the opinion, as above set forth, that all the evidence by the several medical experts who testified in the case showed that Mr. S. would have died as the result of the serious burns regardless of the trip from J. to the asylum and back, and

regardless of the medical treatment; that the burns were of such a character as would inevitably result fatally to the patient.

"If it be conceded that the trip in the ambulance was shown to be unnecessary and improper, and for insufficient reason, and therefore Dr. H. was negligent in sending the patient from J. Sanatorium, and if it be further conceded that this trip caused the patient additional physical pain and suffering, and rendered the patient more uncomfortable, the fact remains that according to the evidence this did not contribute to the death of Mr. S. It only operated to his physical pain and discomfort.

"In this view of the case we do not think that there was any evidence to warrant the jury in arriving at the conclusion that this trip in the ambulance was the cause, or a contributory cause of the death of plaintiff's intestate."

While this case is one which might very well create a strong sympathetic appeal in the minds of a jury in favor of the plaintiffs, the Appellate Court's ruling that no case was proved was undoubtedly correct. In an action to recover damages based upon a claim of death caused by a wrongful act, the plaintiff must show not only a mere wrongful act, but must show that the death resulted therefrom.

### Burns Due to Bandage Catching Fire

A young man employed as a dishwasher in a restaurant injured the back of his hand when an object fell upon it and was sent to the office of a surgeon for the purpose of determining whether he had sustained a fracture. The doctor examined him carefully and found that there was no fracture present, but that there was an inflammation of the tendons on the back of the left wrist. The doctor decided to put on a splint and rubbed the patient's arm and wrist with alcohol for the purpose of cleaning the same, and after the alcohol had dried, he took some cotton, packed it around the arm, and applied a piece of gauze over the patient's hand. Then he applied a splint to the palm and back of the hand from the hand to the elbow, bandaged the hand and forearm with gauze, and permitted the patient to go.

Some minutes later the patient returned to the doctor's office and told the doctor that he had struck a match for the purpose of lighting a cigaret and that the cotton on the bandage had caught fire, and that in attempting to put out the flame he had burned his good hand. The doctor found the cotton scorched but not burned away and found a slight burn on both hands. He took off the bandage, put a new one

on, and treated the man thereafter for burns. Subsequent thereto an action was brought against the doctor charging him with having been responsible for the burns which the patient sustained. The action came on for trial and plaintiff testified in court that after the doctor had finished bandaging the arm he took a colorless liquid and poured it over the entire bandage and failed to caution him that the bandage was inflammable. He claimed that the entire bandage, upon lighting his cigarette, went up in flames resulting in severe and serious burns to both hands.

At the close of all the testimony the trial judge directed a verdict in favor of the defendant, thereby exonerating him from all responsibility for the burns which the plaintiff sustained.

#### Claimed Failure to Detect Glaucoma

A middle-aged man consulted a physician specializing in eye, ear, nose, and throat work, complaining that his glasses were not suitable for his eyes. The doctor made a thorough test of his eyes and found that the patient at 15 ft. distance with slight correction was able to read the doctor's chart properly. He found the patient's near vision to be perfect.

The doctor's examination of the patient also consisted in the use of the ophthalmoscope and tonometer. Light tests indicated that the patient's pupils were normal, and further tests showed that his field of vision was normal. The doctor prescribed proper glasses for the patient and he never saw him thereafter.

A malpractice action was instituted against the doctor in which the claim was made that the doctor failed to properly examine the patient's eyes and that he failed to detect that the patient was suffering from glaucoma in both eyes, and that as a result of the doctor's failing to detect said condition, which it is claimed could have been corrected at that time, the plaintiff claimed to have completely lost the use of his left eye and that the sight of his right eye had become greatly impaired. The plaintiff further claimed that as a result of the negligence of the defendant, eventually he would lose the sight of both eyes, and that in all probability both eyes would have to be removed.

Upon the trial of the case before a judge and a jury, the plaintiff introduced the testimony of an optometrist who claimed that

he examined the plaintiff at about the same time that the defendant had done so, and at that time he found definite cupping of the optic nerve, hardness of the eyeballs, complaints of steam before the eyes and rainbow-like rings around lights. The optometrist claimed that he made a diagnosis of glaucoma. The defendant, on the other hand, testified that at his examination there were no symptoms of glaucoma, and that the man made no complaints compatible with glaucoma. The plaintiff himself testified that about nine months after he had consulted the defendant, he woke up one morning to find that he was blind in one eye and suffering intense pain, and that he consulted another specialist who treated him for glaucoma.

The case was sent to the jury and a verdict rendered in favor of the defendant doctor, thereby exonerating the doctor from all charges of malpractice, and rejecting the proof offered by the plaintiff and his witnesses.

#### Failure to Determine Presence of Particle of Glass

A general practitioner was called to the home of a young man about 20 years of age, and he found the patient lying upon his stomach on the sofa with a bleeding wound in his buttocks.

The doctor was given the history that the patient had received the injury by falling on a glass bottle. He found a laceration about an inch long, but not particularly deep in the buttocks close to the rectum, but not involving the rectum. The doctor made a careful examination with his fingers and with forceps to find whether any particles of glass remained in the wound; but he did not find any such particles. He cleaned out the wound and drew the edges together and applied two sutures. He dressed the wound with a pad held with adhesive strips. He saw the patient and redressed the wound on several occasions, and the wound healed very well. About three weeks after he first had seen the patient, the patient came into his office complaining of soreness where the sutures had been. The doctor examined him and found a hard lump under the skin which he decided was probably a piece of glass that he had been unable to detect. He referred the patient to the accident ward of a nearby hospital for surgical treatment.

Two days later the doctor called at the patient's house and was shown a sliver of glass about an inch long and a quarter of an inch wide which had been removed at the hospital. Thereafter the wound promptly healed and the patient apparently sustained no further ill effects.

An action was instituted against the doctor charging him with malpractice in that he failed to remove the particle of glass on the occasion of his first visit. The case came on for trial before a judge and a jury, and upon the trial the plaintiff, by his witnesses, failed to show that the doctor in his treatment of the case was in any way careless. The Court, therefore, at the close of the plaintiff's testimony dismissed the action.

### Claimed Failure to Detect Bullet in Finger

A boy thirteen years of age was brought to a doctor's office accompanied by his mother. The doctor was told that the boy had been playing with fire crackers and hurt his finger. The doctor found the light index finger swollen and made a diagnosis of infection. He requested the mother to take the boy to some hospital, which she refused and he also advised that an x-ray be taken, which was also refused.

The doctor obtained some tetanus antitoxin and administered to the boy 1,500 units. He applied to the finger wet dress-

ings with chlorazene solution and told the mother to keep the finger dressings saturated with magnesium sulphate solution. The next day the doctor again saw the boy and renewed the wet dressings, and although he requested the boy to return for dressings daily, he did not do so, coming only at infrequent intervals to the doctor's office. When the doctor last saw the boy, about two weeks after the first visit, the swelling was diminished and no mass was felt. Wet dressings were applied at that time and the child was requested to return the following day, but he did not do so. The doctor heard nothing more of the case until two years later when the child's mother told him that he had failed to remove a bullet from the patient's finger. When the doctor treated the patient there was no evidence of any foreign body of any kind, and it seemed impossible that a bullet could have penetrated the finger where there was no breaking of the flesh.

A malpractice action was brought against the doctor charging him with failing to observe the presence of a bullet and removing the same from the patient's finger. The case came on for trial before a judge sitting without a jury, and after all the testimony had been put in, the court directed a judgment in favor of the defendant, finding that the plaintiff had failed to prove that the defendant had been in anyway negligent in the treatment of the case.

### DOCTORS AS ANGEL-MAKERS

A Kentucky Congressman addressing the Medical Association of his State told the doctors that "as I look back over the lapse of years I know that you folks have made more angels than all the preachers." When the laughter subsided, the Congressman went on to imagine a visit to heaven, where he met a youthful spirit and asked: "Son, how did you get to be an angel?" And with a smile at Dr. Martin, the President of the Kentucky doctors, who was seated nearby, the Congressman went on to report the answer of the little cherub, who said: "Well, do you know this fellow Dr. Martin from Harlem, who is now the President of the Kentucky State Medical Association, being installed today?"

"Yes, oh yes, I know the Doctor quite well; old friend of mine. I have enjoyed the hospitality of his home at Harlem. He is a good fellow."

"Well, I'll tell you how I happened to be an angel. Some years ago I went out with a lot of other boys in the neighborhood, and we saw a neighbor's orchard, and the green apples were hanging from the boughs of the trees, and as we looked at those apples each one was invested with a flavor and an aroma which must have

been like that which clung to the cup where Hecuba served nectar to the gods. We leaped the fence and we ate a lot of those apples, and after a while an insurrection and a rebellion arose in my department of the interior and my parents thought someone should be called in to quell the insurrection, so Dr. Martin was called. Doctor looked me over carefully, and after a while he gravely shook his head and said, 'An operation is necessary; it is appendicitis.' So the doctor got out his carving knives, sharpened them up, removed my appendix from my anatomy, took \$250 from the purse of my parents, and gave me a through ticket to the realm of bliss and here I am an angel now because of Dr. Martin." (Laughter).

Insurance agents send their representatives to us for inside information concerning our patients, take our time and expect it to be given free. In the meantime, remarks this doctor in *The Hahnemannian Monthly*, each and all of them are actively engaged in promoting schemes for massed insurance and socializing of medicine. And what can we do about it?

# Books

## BOOKS RECEIVED

Les Arteres Coronaires du Coeur Chez L'Homme.—By Docteur Aime Mouchet. Second Edition. Quarto of 63 pages and 18 plates. Paris, Norbert Maloine, 1933.

External Diseases of the Eye.—By Donald I. Atkinson, M.D. Octavo of 704 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$7.50.

The Medical Clinics of North America.—Vol. 17, No. 5. March, 1934 (New York Number). Published every other month by the W. B. Saunders Company. Philadelphia and London. Per Clinie Year (6 issues), cloth, \$16.00 oct., paper, \$12.00 net.

The Management of Fractures, Dislocations, and Sprains.—By John A. Key, M.D., and H. Larle Conwell, M.D. Octavo of 1164 pages illustrated. St. Louis, The C. V. Mosby Company, 1934. Cloth, \$15.00.

Chronic Nasal Sinusitis and Its Relation to General Medicine.—By Patrick Watson Williams. Second Edition. Octavo of 262 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$5.00.

Surgical Clinics of North America.—Vol. 14, No. 2. April, 1934 (New York Number). Published every other month by the W. B. Saunders Company, Philadelphia and London. Per Clinie Year (6 issues) cloth, \$16.00, paper, \$12.00.

Practical Medicine Series.—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Series 1933, Chicago, The Year Book Publishers [c. 1933]. The 1933 Year Book of General Therapeutics. Edited by Bernard Fantus. M.D. 12mo of 464 pages, illustrated. Cloth, \$3.25.

A Practical Treatise on Diseases of the Skin for the Use of Students and Practitioners.—By Oliver S. Ormsby, M.D. Fourth Edition. Octavo of 1288 pages,

illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$11.50.

Acute Intestinal Obstruction.—By Monroe A. McIver, M.D. Octavo of 430 pages, illustrated. New York, Paul B. Hoeber, Inc., 1934. Cloth, \$7.50.

Modern Drug Encyclopedia and Therapeutic Guide.—By Jacob Gutman. M.D. Octavo of 1393 pages. New York, Paul B. Hoeber, Inc., 1934. Cloth, \$7.50.

Corrective Physical Education.—By Josephine L. Rathbone. M.A. 12mo of 292 pages, illustrated. Philadelphia, W. B. Saunders Company, 1934. Cloth, \$2.50.

Urinary Analysis and Diagnosis.—By Microscopical and Chemical Examination. By Louis Heitzmann, M.D. Sixth Edition. Octavo of 385 pages illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$5.00.

Localization of Function in the Cerebral Cortex.—An Investigation of the Most Recent Advances. Proceedings of the Association for Research in Nervous and Mental Disease. Vol. XIII, 1932. Octavo of 667 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1934. Cloth \$8.00.

The Principles of Gynecology.—A Text Book for Students and Practitioners. By William Blair Bell. M.D. Fourth Edition. Octavo of 848 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$10.00.

Obstetric Medicine.—The Diagnosis and Management of the Commoner Diseases in Relation to Pregnancy. Edited by Fred L. Adair, M.D., and Edward J. Stieglitz, M.D. Octavo of 748 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$8.00.

The Social Adjustment of the Tuberculous.—By Beulah W. Burhoe. Octavo of 55 pages. New York, National Tuberculosis Association [c. 1934]. Paper, 50¢.

## BOOKS REVIEWED

Neuroanatomy.—A Guide for the Study of the Form and Internal Structure of the Brain and Spinal Cord. By J. H. Globus, M.D. Sixth Edition. Quarto of 240 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$3.50.

This revised students' stand by offers an original and sensible method of presenting the practical study of brain anatomy. The up-to-date character of the book is reflected especially in its outlook. As a guide it serves the purpose of a dissection's atlas for the brain. Through out the sequence of sections, however, there is a running interpretation of the connected functions represented by the various parts studied and, to addition, there are concise and well-directed questionnaires appended which may be used by the student as a basis for further reading in neurology and physiology. Although the book manifests little of the consciously didactic attitude, the sectional discussions amply describe the topography and the tracts variously presented in the brain sections. It is thus composite service as guide, atlas, and textbook which recommends the book. There is a good supply of unfiled outlines and drawings which serve the student as practice and study forms.

SAM PARKER

Influenza.—By David Thomson and Robert Thomson. Quarto of 640 pages illustrated. Baltimore, Williams & Wilkins, 1933. (Volume IX, December, 1933, of Annals of the Pickett Thomson Research Laboratory, Monograph XVI, Part 1.)

In the complete monograph of which this Part 1 the contents of over 4,000 papers have been abstracted and organized and the writers believe that to make libraries complete, a series of volumes similar to this one is needed on various subjects in medicine, to condense and organize the tremendous number of papers and books which accumulate over a period of years.

Early chapters deal with the nomenclature of the disease, antiquity, lists of great epidemics and a review of the literature of these. The clinical character, varieties and symptoms of influenza are described in minute detail. Data may readily be found regarding any symptom of the disease as for example bradycardia, tachycardia or arrhythmias. The interesting subject of cardiac complications and sequelae will be discussed in the second part.

This is indeed a monumental work for reference and shows evidence of tremendous industry.

W. E. McCOLLUM

Health Education in an American City.—An Account of a Five Year Program in Syracuse, N. Y. By Louise T. Bache. Octavo of 116 pages, illustrated. Garden

City, N. Y. Doubleday Doran & Company, 1934. Cloth, \$2.00. (Published for the Milbank Memorial Fund.)

This book describes the activities which the author supervised in Syracuse, during the Milbank Fund Health Demonstration. It relates in detail the manner in which concerted effort may be made to educate the public in relation to health matters, promulgated by a local Health Department.

In form it is much like a primer, and perhaps intended as a guide to minor department employees as well as department heads, at least it so impressed the reviewer. The careful outlining of detail should save future demonstrators much trouble, aiding them in avoiding "trial and error" methods.

As is usual in this type of publication, there is a paucity of the words "medical profession". It is the family doctor who must in the end be the one who continues to be the advisor of the family in health matters even though it be only by means of the casual word dropped in making his rounds.

Health authorities may well begin a campaign such as this book deserves by a few get-togethers with the profession.

FREDERICK S. WETHERELL

The Practical Medicine Series.—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Series, 1933. Chicago, The Year Book Publishers [c. 1933]. The 1933 Year Book of the Eye, Ear, Nose and Throat. The Eye, edited by E. V. L. Brown, M.D., and Louis Bothman, M.D. The Ear, Nose and Throat, edited by George E. Shamhaugh, M.D., and Elmer W. Hagege, M.D. 12mo of 632 pages, illustrated. Cloth, \$2.50.

The material, while not complete, does cover very well the more important contributions of American and foreign journals. Only rarely does an abstract appear of a worthless study. It is encouraging to note that functional testing of the auditory apparatus has not gone entirely out of style. An interesting group of studies is reported on nasal functions which help one to understand the increased susceptibility to "common colds" when home heating plants are started each fall.

One becomes more and more enthusiastic over this little work as the years go by which brings forth more and more useful information. It is a book well worth frequent perusal.

JOHN N. EVANS

Curing Our Nerves.—By Marshall M. Cloud, M.D. Octavo of 206 pages. Pasadena, Cal., Pasadena News Syndicate Publishers, 1934.

In spite of the author's claim that this book "will be of great value to the nurse and physician in their man-

agement of nervous cases," it "can be understood by any one," his statements are disjointed, contradictory, unscientific, and essentially dangerous. His general thesis is that alcohol and tobacco should never be indulged in, and that venereal disease causes everything. He lists as the cause of nervousness everything from amebiasis to eye strain, and Virgil to Pasteur—in fact, makes it impossible for anyone to escape nervousness, and then advises that he can cure all. It is interesting to note that "Nervous persons often have a fear of being alone, and are in great distress as soon as they are left alone. This can be removed by having company about." He recommends in general the reading of the Bible: "If you are unable to clearly draw the line in your own mind of what to do and what not to do, I would say, . . . read and study the Ten Commandments . . . then read the Book of Hebrews in the New Testament."

If the physician wishes to create a neurotic, there is no doubt that this book would act as an excellent etiologic agent.

J. L. MCCARTNEY

**The 1933 Year Book of Radiology.**—Diagnosis, edited by Charles A. Waters, M.D. Therapeutics, edited by Ira I. Kaplan, M.D. Octavo of 804 pages, illustrated. Chicago, The Year Book Publishers [c. 1933].

This second Year Book, is of the same high standard as that of the first year. The subject matter selected under Dr. Water's editorship represents the latest advances in the diagnostic fields, and the correlation of the clinical and roentgenological aspects is extremely valuable.

The study of the glandular system with reports of the results of calcification of the suprarenals in Addison's disease, the studies of the breasts and of the pharynx are noteworthy. The section on respiratory and cardiovascular disturbances with its illustrations of case reports, as well as the roentgenological findings, comprise a valuable textbook on these subjects. The chapters on technic and teaching are very valuable. In the section on therapeutics, Dr. Kaplan's introductory remarks are valuable as a resumé of radiotherapeutic rationale. His "general considerations" represent present-day knowledge of cancer with the results from many sources in the care of such patients. The whole book represents the advances of the last year in the fields of radiological diagnosis and therapeutics and its possession is essential for one who would keep up-to-date in these fields.

The publishers work, with its good paper, clear type and illustrations is praiseworthy. The placing of the illustrations closer to the context corrects a fault found in the first volume.

C. EASTMOND

**Lymphatics, Lymph and Tissue Fluid.**—By Cecil K. Drinker, M.D., and Madeleine E. Fields, Ph.D. Octavo of 254 pages. Baltimore, The Williams & Wilkins Company, 1933. Cloth, \$3.00.

This volume of about 250 pages is practically a critical survey of experimental data on the anatomy, pathology, immunology and especially the physiology of the lymphatics, lymph, and tissue fluids of the mammalian body.

The authors accept the theory of the closed tube structure of the lymphatics and quote Dr. Sabin's recent confirmation of this theory. The entrance of foreign particles and colloidal solution into the lymphatics is discussed at length. The chapters on the flow and composition of lymph, as well as on tissue fluids, contain charts with experimental data, all of which are critically analyzed.

The concluding chapter is on practical considerations, which includes a survey of the role of the lymphatics in inflammations due to infection. Antecedent inflammation tends to block lymph entrance which, however, may be enhanced by movement or massage of the affected parts. There is, however, a conspicuous lack of clinical observations in this chapter to confirm or disprove the various experimental observations.

SILIK H. POLAYES

**The Nature of Disease Journal.**—Vol. 2. By J. E. R. McDonagh, F.R.C.S. Octavo of 196 pages. London, William Heinemann, Ltd., 1933. Paper, 7s. 6d.

The author has undertaken to view diseased processes from the viewpoint of physical and colloid chemistry. The blood is studied almost exclusively by measuring suspension stability, refractive index, sugar, urea, cholesterol, calcium, and the ultramicroscopic pictures of the serum. Many highly speculative viewpoints are presented. An attempt is made to resolve

physiologic and pharmacologic processes into their colloid and crystalloid components. The effects of drugs and diseases on the dispersion of the tissue colloids are speculated upon and clinical cases are cited as illustrative of various types of reactions.

DAVID GLUSKER

**Public Health Nursing in Industry.**—By Violet H. Hodgson, R.N. Prepared for the National Organization for Public Health Nursing. Octavo of 249 pages, illustrated. New York, The Macmillan Company, 1933. Cloth, \$1.75.

This book covers the field of industrial nursing in a very comprehensive and detailed manner. It brings out and answers all the questions that may arise in industrial medicine. A nurse who is interested in this phase of medicine, would do well to study this work. It is ideal preparation for one who is anxious to know the details of industrial organization and the problems that are concerned from a health standpoint.

J. J. WITTMER

**The Nature and Treatment of Amentia.**—By L. Pierce Clark. Octavo of 306 pages. Baltimore, William Wood & Company, 1933. Cloth, \$4.25.

The work of the late Dr. Clark is based upon a rich experience in the field of mental deficiency, and presented in the light of psychoanalytic interpretation. The introductory chapter is devoted to the basic principles of psychoanalysis. The remainder is a description of the different aspects of mental deficiency, and throughout, there is the psychoanalytic implication of the basic drive in the behavior of the amentia patients. Many illustrative cases are described.

The unique way of the presentation of the subject should stimulate further and renewed interest in the subject.

IRVING J. SANDS

**Treatment of the Commoner Diseases Met with by the General Practitioner.**—By Lewellys F. Barker, M.D. Octavo of 319 pages. Philadelphia, J. B. Lippincott Company [c. 1934]. Cloth, \$3.00.

Among many other subjects the author covers the following: Constitution and Environment; Immunity and Allergic Reactions. The Common Cold and the Treatment of Hay Fever are handled quite briefly. Pneumonia is rather thoroughly covered. Tuberculosis receives many pages from all angles. The Cardiac Disorders are thoroughly and intelligently discussed. Rather complete data are given on the Anemias.

The treatment of gastric conditions is handled in a rather orthodox manner. The subject of colitis receives less space than might be given to this interesting and perplexing malady. The use of ammonium chloride and kindred drugs is not even mentioned in the discussion of the treatment of kidney diseases. Considerable space has been given to arthritis in its many forms and types. The neurological conditions have been very well covered. In the treatment of the chapter on metabolic, and food and Vitamin deficiency disease, the author deserves special mention for his excellence of presentation.

On the whole the book is worthwhile. We realize how difficult it is to cover the entire field of therapy adequately when so many new ideas for therapy are being brought out almost daily.

BENJAMIN M. BERNSTEIN

**Maternal Mortality and Morbidity.**—A Study of Their Problems. By J. M. Munro Kerr, M.D. Octavo of 382 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$8.25.

When this book was published Kerr had not seen the New York Committee Report on Maternal Mortality, but it is well known that the Reports of the Departmental Committee on Maternal Mortality and Morbidity show about the same figures; it is on these British reports that much of the discussion in this book is based. It is interesting to note, however, in his chapter on domiciliary service, that he recommends that all primigravidae, with few exceptions, be delivered in a hospital, and that all women in whom previous delivery was in any way abnormal or difficult should be advised to enter a hospital for subsequent delivery. No operative treatment, except of a minor nature should be undertaken in the patient's home unless her condition is such as to contra-indicate removal to an institution.

A very valuable book, easily and quickly read, and of great interest to obstetricians and other students of the problem of maternal welfare.

CHARLES A. GORDON



## THE PREVENTION OF ASPHYXIA DURING ANESTHESIA

PALUEL J FLAGG M D

*New York City*

The problem of preventing asphyxia in anesthesia may perhaps be best approached as follows

Let us first consider the common causes of asphyxiation. We may then suggest the means of relieving these causes by modern technical methods.

Two fundamental causes of asphyxia, or oxygen want, are generally recognized. First, the physical or mechanical, second, the biochemical.

The first group of causes—the physical or the mechanical—is quite well understood as it is manifested above the glottis. It is not so well understood in the factors involving the trachea, the bronchi and their ramifications.

The second group of causes—the biochemical—is frequently lost sight of altogether.

As a preliminary to a brief consideration of the first group of causes, namely, that due to mechanical or physical complications, it is well to note the following:

The anesthetic mixture of gases may be accurately measured, the available oxygen present may be adequate, but this accuracy is no more a guarantee of the ultimate adequate oxygenation of the patient's blood than is the presence of adequate oxygen always present in atmospheric air a guarantee against asphyxia in the presence of mechanical obstruction. We must not be deluded therefore, by the implied safety of mechanical devices which indicate oxygen percentages without, of course, any regard whatever for the factors which complicate the delivery of such gases into the blood stream. Unless the patient is the index governing the percentage mixture delivered to him, unnecessary anoxemia follows and increased morbidity and mortality will result. While there is a wide

margin of tolerance to varying degrees of anoxemia as far as mortality is concerned, postoperative sickness, increased bleeding, and muscular rigidity are all too common. Anesthetic devices delivering accurate mixture of gases are a convenience, they by no means guarantee a safe or efficient anesthesia.

Let us now consider the mechanical factors which interfere with the proper oxygenation of the blood during anesthesia. We may consider these causes under two headings: respiratory and circulatory.

I As regards the *respiratory* causes, we may note the following:

*Above the Glottis*

- 1 Spasm and rigidity during induction
- 2 Engorgement of tissues as the immediate result of the anesthetic agent
- 3 Relaxation due to the anesthetic agent
- 4 Upper respiratory obstruction from nasal occlusion and laryngeal spasm as well as obesity and a plethoric state of the tissues
- 5 Obstruction from secretions, mucus, vomitus, blood

*Below the Glottis*

- 1 Spasm of the bronchioles due to asthma
- 2 Acute pulmonary inflammation partially obstructing the tubes
- 3 Fluid in the alveoli
- 4 Interstitial edema of the lining membranes
- 5 Reduced tidal volume
- 6 Atelectasis
- 7 Intrathoracic operations reducing the ventilating surface
- 8 Reduced partial pressure of oxygen by increased concentration of anesthetic

II *Circulatory*

- 1 Reduced rate or volume of the circulation
- 2 In infants congenital abnormalities of the heart and blood vessels
- 3 Congenital atelectasis
- 4 Central respiratory pressure
- 5 In operations involving the intracranial structures increased pressure due to abscess or tumors

As regards the biochemical causes of asphyxiation during anesthesia, the following may be noted as the most important:

1. Premedication by the basal anesthetics: morphine, hyocine, etc.
2. Artificial alkalosis with overventilation.
3. Reduced carbon dioxide concentration giving rise to the Bohr effect.
4. Anaphylactic reactions or idiosyncrasy due to the anesthetic.

In the first group of causes due to mechanical obstruction, the characteristic cyanosis of anoxemia is always apparent.

In the second group of causes, those due to biochemical effects, a true anoxemia as regards oxygen available for tissue use may be present in the absence of cyanosis. In other words, the patient with an apparently normal color may develop, unknown to the observer, a true asphyxiation whose existence will be apparent only through the rate, rhythm, and volume of the respiration.

Returning for a brief discussion of the foregoing causes of asphyxiation and reviewing the means available to meet these difficulties, it has been noted that a perfect device for administering anesthetic gases cannot guarantee the success of the anesthetic without a thorough understanding of the factors which may complicate the administration. This point should be strongly emphasized in laying down anesthetic routines for induction, maintenance and recovery. If anoxemia is not only undesirable but dangerous, the practice of inducing a patient with nitrous oxide to a point of jactitation and complete apnea, for the sake of speed, and the retention of a pure gas-oxygen sequence should not be tolerated. The reservation that such complete anoxemia can be immediately overcome by oxygen under pressure is by no means an invariable remedy for, granted the immediate biochemical effect of such insufflation, a patent airway instantly available must be presupposed.

Where difficulty exists, therefore, in inducing anesthesia with a gas-oxygen sequence, the use of a more powerful anesthetic, namely, ether, should be resorted to without hesitation. The addition of ether permits of a high concentration of oxygen which will produce sufficient oxygenation of the tissues, even in the face of a greatly reduced tidal volume.

It does not follow, however, as was formerly thought, that where the patient fails to respond promptly to the use of ether this anesthetic should be augmented by the use of a still more powerful anes-

thetic, chloroform. It is in precisely this situation that chloroform deaths are prone to occur. It may be said without hesitation that all patients may be completely anesthetized with ether in the presence of sufficient oxygen provided the necessary tidal volume is assured.

One of the greatest advances in anesthesia during the last two decades was the introduction of the pharyngeal tube or artificial airway. The introduction of this tube previously lubricated, with a free edge of sufficient gage to allow of a soft bevel, introduced with due respect for the structures which it must encounter, may be depended upon to bring about complete anesthesia.

In the presence of initial obstruction due to rigidity and to the engorgement of the tissues from anoxemia where such spasm will not permit of the introduction of an oral tube, a nasal tube, an improvised catheter, stomach or rectal tube, lubricated by the patient's saliva should be immediately passed along the floor of one nostril into the oropharynx. The prompt relief thus obtained may be augmented by the brief insufflation of oxygen and the resumption of the inhaler.

Upon the completion of induction and the disappearance of rigidity, the most common and annoying mechanical obstructions which must be faced are those due to the falling back of the tongue and the accumulation of secretions in the mouth and pharynx. An unprepared patient will not infrequently complicate his induction by reflex attempts to empty his stomach. Rapid inductions with a gas-ether sequence in which no premedication has been used are almost invariably accompanied by increased salivation. Small children in whom lymphoid tissue is present obstruct themselves promptly in this manner. Nasal and dental operations are frequently accompanied by bleeding which mechanically interferes with the freedom of the respiration. It is obvious that in the presence of such conditions an anesthetic machine devised to deliver a definite percentage of gases will fail to afford the oxygen required by these complications. Suction should always be available not only in the operating room but in the anesthetizing room where secretions accumulating during induction frequently hamper the anesthetic. One of the most convenient forms of suction for permanent installation is that afforded by the ordinary steam ejector which may be placed in any convenient steam circuit.

One of the most annoying forms of mechanical obstruction is that due to laryngeal spasm. Such spasm promptly interferes with the tidal volume and completely throws out any predetermined mixture. It is frequently difficult to locate the cause. Sudden ether concentration, sudden pain reflex, aspiration, or incorrect position of the head, should each be eliminated in turn. If gas-oxygen is being administered, oxygen should be increased and ether resorted to.

Mechanical obstructions below the glottis are commonly met with. One of the most frequent causes of such obstruction is asthma or chronic bronchitis. The spasm present and the reduced tidal volume as well as the restricted ventilating surface suggest the necessity of premedication and an anesthetic mixture with a high oxygen concentration. In asthma, the anesthetic actually affords a rational treatment for an attack. A high oxygen concentration implies the need of ether as the chief agent. The tendency of ether is to produce a dilatation of the airways through which dilatation the additional oxygen administered is more readily absorbed.

In the case of acute pulmonary inflammation the anesthetist is faced with a double problem. First, the traditional irritating effect of a vapor containing ether and, second, the tendency to atelectasis and increased pulmonary complications which may follow the use of sedatives sufficient to bring about anesthesia. The tendency to the accumulation of pulmonary secretions following the use of local anesthesia in these conditions, suggests that they must be used with care.

Chloroform, contra-indicated because of its recognized mortality under ordinary conditions, finds acceptance where gas-oxygen or ethylene-oxygen will not produce adequate control. It is the writer's experience in line with the reaction of the tuberculous patient that a low concentration (respirable) of ether in oxygen combined with nitrous oxide probably offers the best control of the anoxemia.

A very interesting distinction is to be made between secretions in the alveoli interfering with ventilation and inflammation of the alveolar epithelium. Fortunately, during anesthesia the interstitial edema of the alveolar walls is seldom seen. Fluid present in the alveolar spaces promptly absorbs the oxygen in the respired atmosphere and passes through

to the alveolar capillaries, provided a high concentration of oxygen is supplied. The likelihood of such absorption is greatly increased if the respired oxygen is placed under pressure. Even the 5- to 8-mm. pressure afforded by the bag of the inhaler is helpful.

The routine use of basal anesthetics and other pre-anesthetic medication is not infrequently followed by a reduced rate and small tidal volume. If to this is added respiratory obstruction from mechanical causes above the glottis, a low-grade and persistent anoxemia results. It has become the custom in nose and throat surgery to omit premedication for this reason. In abdominal work where a closed method may be used continuously, permitting of an autogenous  $\text{CO}_2$  stimulation and an adequate supply of oxygen, little difficulty is experienced. However, the practice of overcoming such depression during induction by adding  $\text{CO}_2$  to stimulate deeply the respiration thereby speeding up the induction, is fraught with the hazard that when such complete induction is obtained and the stimulating  $\text{CO}_2$  is withdrawn, the respiratory center depressed by the anesthetic and overstimulated by the  $\text{CO}_2$  may fail to respond.

In the presence of multiple or single atelectatic areas in one or both lungs, the resultant reduced respiratory surface will require oxygenation to a degree incompatible with the use of nitrous oxide as an anesthetizing agent. The same is true in the case of intrathoracic operations in which the patient must depend upon the absorptive area of a single lung. It is the practice in thoracic surgery to operate either with the incomplete anesthesia afforded by gas-oxygen with a high concentration of oxygen, or by an intratracheal anesthesia in which artificial obstruction to the respiration of the upper airway is mechanically overcome and through which facility ether-oxygen anesthesia may be used to advantage.

It is not uncommon to observe an increasing degree of anoxemia in the presence of a deepening of the anesthetic, especially where ether is used alone. The combination of mechanical obstruction plus the displacement of oxygen by the increased partial pressure of the ether is readily relieved by adding oxygen or reducing the ether tension allowing the patient to recover.

**CIRCULATORY.**—Cardiac disease in which the rate of the beat and volume delivered is materially reduced will show itself in cyanosis of the mucous membranes and skin. Valvular lesions are the most common cause of such conditions. It has been the writer's experience that the best cardiac stimulant kept within the limit beyond which it becomes a depressant, is ether-oxygen with  $\text{CO}_2$ . Seriously decompensated cases are most safely approached by such technic. Such an approach is in contradistinction to the view formerly held in which it was attempted, by the use of chloroform, to reduce the rate of the heart beat and the strain brought about by the peripheral circulation. This approach was handicapped by the fact that the reduced respiratory excursion failed to provide the assistance to the pulmonary circulation which is constantly present in a free, deep respiration. Mechanical conveniences to overcome respiratory obstruction and the convenience of oxygen- $\text{CO}_2$  now renders ether the anesthetic of choice in preventing anoxemia in such cases.

In new-born infants one of the best proofs of the presence of a cardiac lesion or of a congenital abnormality of the large blood vessels in which the blood from the right ventricle is short-circuited into the general circulation, is the persistence of anoxemia in the presence of respired or insufflated oxygen.

Much work remains to be done in the field of congenital atelectasis. The presence of such atelectasis is always evidenced by a relative anoxemia which, however, disappears on the insufflation of oxygen to reappear once more when this treatment is withdrawn. The amount of pressure to be used in the intratracheal insufflation of such infants is usually limited to 25 mm. and its duration does not exceed five seconds. The effects produced by this insufflation are variable and depend upon the extent and the nature of the atelectasis.

In the case of central respiratory pressure in operations in the cranial cavity, or where medication has caused the cessation of the activity of this center, nothing remains but to support the circulation by the intracheal insufflation of oxygen until such time as the effects of the depression may be overcome or the circulation fails. In a recent case in which there was central respiratory paralysis owing to the presence of a cerebellar abscess, the circulation was maintained by such insufflation for a period

of fifteen hours, trephining being done in the course of this period without the necessity of any anesthetic agent.

**PREMEDICATION.**—The second group of causes comprises the biochemical, namely, premedication, artificial alkalosis, the Bohr effect, and anaphylaxis. The beneficial effects of premedication—reduced nervous tension, quiet induction, reduced amount of inhalation anesthesia during maintenance with increased ease of control—are frequently complicated by:

(a) Reduced rate and depth of the respiration.

(b) Narrow margin of safety where full relaxation is necessary.

(c) Reduced activity of the swallowing and cough reflexes following operation.

The ill effects of premedication above noted may be met during induction and during maintenance in surgery of the abdomen and extremities, for under these conditions rebreathing and  $\text{CO}_2$  stimulation may be freely employed.

In surgery involving the nose and throat, however, induction is frequently difficult and the control of maintenance is lost owing to the reduced rate and depth of the respiration.

Of even more serious importance, since the cough and swallowing reflexes are depressed, is the aspiration of blood and vomitus which may take place during recovery following nose and throat operations or where the field is mechanically obstructed by nasal packs or sponges left in the tonsil fossae for purposes of hemostasis.

With a view to protecting the patient from these generally recognized hazards, the author has made it a practice to omit routine premedication before nose and throat operations. It is conceded that this technic increases the excitement during this period, but when this is balanced against the embarrassment caused by the depressed respiration during induction, and the danger of aspiration and asphyxial obstruction during recovery, it is felt that this difficulty must be accepted.

In order to reduce the danger of post-operative asphyxia from aspiration and obstruction, the author makes it a practice to place all patients on the side, with the head extended, immediately after operation, whether this be for a nose and throat or an abdominal operation. The patient remains in this position until his reflexes have been completely recovered.

**ARTIFICIAL ALKALOSIS WITH OVER VENTILATION**—The possible harmful effect of excessive preoperative alkalinization may be deduced from the following considerations

The normal rate and rhythm of the respiration are determined by the stability of the hydrogen ion concentration within the normal limits of 7.3 to 7.5 (Hydrogen ion concentration, pH of water is 0.0000001, seven decimal places referred to as 7). The normal pH of the circulation is between 7.3 and 7.5, below 7.3 is considered an acidosis, above 7.5 an alkalosis.)

This stability is also represented by the fraction  $\text{H}_2\text{CO}_3/\text{NaHCO}_3$  in the proportion of 1/20.

An increase in the  $\text{H}_2\text{CO}_3$  either through breaking down of the tissues or by the inhalation of  $\text{CO}_2$  causes a 1+ /20, resulting in dyspnea, until the excessive  $\text{H}_2\text{CO}_3$  is reduced or the  $\text{NaHCO}_3$  is increased. Yandell Henderson has shown that dogs placed in an atmosphere high in  $\text{CO}_2$  in which their  $\text{H}_2\text{CO}_3$  is raised 1+ /20, will gradually become tolerant of this excess. If these dogs are now removed from the atmosphere high in  $\text{CO}_2$ , their  $\text{H}_2\text{CO}_3$  is lost more rapidly than the  $\text{NaHCO}_3$ . As a consequence of this disturbed ratio, the  $\text{CO}_2$  available for the stimulation of the respiratory center is insufficient to bring about the necessary respiration and the dog dies of apnea.

The same condition may obtain in the child who is overalkalized and who may suddenly develop a reduced  $\text{H}_2\text{CO}_3$  by overventilation, such as may occur by crying with the airway wide open in the presence of an open ether administration, by the stimulating effect of pain reflexes, and the total absence of rebreathing. A rapid respiration becoming more and more shallow in the presence of overventilation and with a background of prolonged alkalinization, should be promptly recognized and rebreathing or  $\text{CO}_2$  administered.

Furthermore it is to be noted that such a patient suffers asphyxiation or oxygen want without the usual phenomena of cyanosis. The reason for this situation is as follows:

**REDUCED  $\text{CO}_2$  CONCENTRATION GIVING RISE TO THE BOHR EFFECT**—Oxyhemoglobin is an unstable compound. It yields its oxygen to the tissues with a varying degree of rapidity. The speed with which oxygen becomes available for use by the

tissues depends upon the concentration of  $\text{CO}_2$  or the ratio of  $\text{H}_2\text{CO}_3/\text{NaHCO}_3$ , which is present in the circulation.

It is obvious, therefore, that a 1/20 ratio, artificially established, either by overalkalinization or by overventilation will result in a relatively stable hemoglobin. This hemoglobin, therefore, while carrying oxygen and giving to the blood its normal color, fails to give up its burden to the tissues. Clinically, we see a patient with a rapid, shallow, failing respiration, a small, running, thready pulse, a pale but pink skin and mucous membranes.

In view of this profound and serious biochemical disturbance which may result from overventilation or excessive use of the soda lime absorption technique, it is well to be prepared to meet this little recognized asphyxia occurring without cyanosis, by early and adequate oxygen  $\text{CO}_2$  treatment.

**ANAPHYLACTIC REACTION OR IDIOSYNCRASY DUE TO ANESTHESIA**—Unusual reaction to anesthetic agents occurs not infrequently when local anesthetics are employed. Among the local anesthetics, cocaine is most to be feared.

The biochemical reactions are too complex for present discussion. The fact remains, however, that in the course of such an anesthetic the patient may suddenly lose consciousness, develop an imperceptible pulse, and cease to breathe.

On the assumption that the circulation while not discernible may still be functioning, the indications are to practice intra-tracheal insufflation wherever relaxation of the upper airway permits this procedure.

In this connection it is well to bear in mind the danger of the use of adrenalin in conjunction with chloroform anesthesia. Such medication not infrequently precipitates a fatal ventricular fibrillation.

It has been suggested that the sudden, hitherto unexplainable deaths which have occurred during the early stages of a chloroform administration, in which the patient expressed grave anxiety concerning the experience which he was about to approach, may be explained through the sudden hyperfunctioning of the adrenals, known to take place under such conditions. All such cases presenting the symptoms of apparent death should have the benefit of immediate oxygen  $\text{CO}_2$  therapy, by a technique best designed to meet the conditions.

The technique of relieving asphyxiation

occurring during anesthesia should include all the physical and chemical means at our disposal. The physical turn on the principle of securing a patent airway. The chemicals depend upon the use of oxygen-CO<sub>2</sub> for direct relief and the proper selection of premedication and of the anesthetic agent.

Since the proper choice of anesthetic agent and the use of oxygen-CO<sub>2</sub> has been repeatedly referred to in the foregoing, we may confine our attention to a consideration of the physical or mechanical means which we have at our disposal to insure the freedom of the airway.

Where abundant oxygen is used during induction, the early spasm and rigidity may be ignored provided the oxygenation of the tissues is adequate. A small tidal volume passing through a restricted airway, if carrying a high percentage of oxygen and a sufficient concentration of the anesthetic, will usually be followed by sufficient relaxation to permit of the separation of the teeth by the fingers. When this separation is sufficient to permit the introduction of an airway or pharyngeal tube, prompt relief is experienced. In the case of a severe spasm complicated with nasal obstruction occurring in a florid individual a marked and alarming cyanosis comes on very quickly. This may be relieved by passing a small tube lubricated with the patient's saliva along the floor of one nostril beyond the site of obstruction. Oxygen insufflated through this tube will immediately relieve the cyanosis and often permit a sufficient temporary relaxation to permit the introduction of a pharyngeal tube. The relaxation following complete anesthesia is best dealt with by the routine use of a pharyngeal tube. This tube should be constructed of material of heavy gage so that the edge may be rounded. It is well to lubricate the tube before intubation, one being careful that it is passed over the surface of the tongue and not against the frenum. Trauma frequently results in the hasty use of a light-gage, roughened tube introduced in the face of severe spasm of the masseter. Too large a tube will sometimes cause trauma of the fauces in a narrow pharynx.

Suction should always be available in every anesthetizing and operating room, particularly where no medication has been used, as in the case of little children and in adults in whom it has been withheld.

Suction should always be available for immediate use to control unexpected vomiting or hemorrhage. It is not sufficient that the equipment be available within a few minutes. It should actually be in operation with a sterilized suction tube attached. There is no excuse for not providing such protection as even the element of expense is largely done away with when steam is used as a source. A simple, powerful steam injector in any nearby steamline provides inexpensive and adequate suction for all types of work.

Laryngeal spasm is sometimes difficult to control but usually yields to a deepened anesthesia. While the use of the pharyngeal tube or airway is generally accepted, the extension of this convenience and life-saving technic down to and through the vocal cords, is not commonly practiced.

With a view to developing the simplest possible procedure to overcome respiratory obstruction above the trachea, thereby allowing the free respiration of the patient by overcoming the many causes of obstruction occurring during nose and throat work, an intratracheal inhalation tube was developed some seven years ago under the immediate direction of Chevalier Jackson. Great attention was directed to the avoidance of trauma to the glottic tissue. In order to remain within the safety limit as to size and shape as well as to consistency, the intratracheal section was made identical to the ordinary bronchoscope, permitting thereby the vast and varied experience of bronchoscopy to substantiate its safety. It is well recognized that glottic trauma in the ordinary bronchoscopy is negligible when practiced with ordinary care. If, to this margin of safety, is added the relaxed field offered by anesthesia and if the tube for this purpose is lubricated, the margin of trauma becomes certainly less than the dangers which one must face by the failure to intubate where indications are present.

The second point of importance was to practice a technic of intubation which was surgically clean and subject to the safety which direct vision alone will provide. The technic of exposure recommended by Chevalier Jackson again provided the ideal to be followed. The complications which the ambulatory anesthetist must face in the care of equipment was greatly reduced by the use of a simplified laryngoscope entirely serviceable for short exposures. This simple laryngoscope, is of great practical value and dependability.

The technic of laryngoscopy in the conscious patient under local anesthesia is technically difficult. The ease of this procedure is directly in proportion to the muscular relaxation brought about by anesthesia. A well-relaxed patient is ordinarily intubated with the greatest ease. A partially relaxed patient is much more difficult. The popularization of gas-oxygen for anesthesia with the least possible ether has produced a state of affairs where many anesthetists are no longer capable of producing a full and safe ether anesthesia with complete relaxation. Such a handicap by placing an undue resistance against the otherwise simple procedure of laryngoscopy has resulted in the popularization of blind intubation.

It seems hardly necessary to point out the trauma and the danger of infection when a blind technic is consistently followed, especially where an intratracheal tube passes through a nostril on its way to the glottis. However, the popularization of this technic because of its somewhat greater ease of manipulation demands that the dangers faced should be recognized.

The third consideration in the original preparation of the intratracheal inhalation tube was its consistency. The ideal to be achieved was the largest possible tube containing the thinnest possible wall; this wall to be made of a material which would not become soft and compressible. In the early periods of our experimental work, rubber tubes were used. These gradually became softened and were easily compressed by instruments and sponges pressing upon them. Such resultant collapse was, of course, fatal to the technic. Furthermore, it is difficult to understand the power of the glottic reflex unless one has frequently seen this in action. Such reflex may readily compress a softened rubber tube thereby obstructing the airway.

Lastly, it was found of great value to pass a suction catheter through the intratracheal tube to remove secretions which may have accumulated in the tracheal bronchial tree during induction or in the course of the anesthesia. The writer considers this feature one of the most important in this technic. A tube yielding the largest possible lumen and the thinnest possible wall which would at the same time prevent compression and provide flexibility, was finally secured by adopting a Penrose tubing to a tightly wound, non-corroding spring.

The writer has used this tube for the last six years. He has been repeatedly impressed with the consistency with which it provides the safety and the control desired. Irritation of the glottis and trachea has been conspicuous by its absence. Occasionally a soreness of the pharyngeal mucosa is complained of when the gauze packing used is not lubricated. In long cases some irritation of the trachea has resulted from contact with the tube. This may be reduced by moving the position of the tube during the course of the operation. Since the great majority of the patients intubated have been anesthetized for conditions of the nose and throat where the danger of aspiration was always present and the duration of the anesthesia was often determined by its efficiency, the writer feels that the complications referred to are much more than counterbalanced by the safety and the efficiency provided. As time goes on, his reaction is to use this tube more frequently instead of less frequently. He has never regretted intubating a patient but has frequently regretted a failure to do so. The actual clinical application of this technic may best be demonstrated by the motion picture which follows and which will conclude this paper.

**CONCLUSIONS.**—The prevention of asphyxia in anesthesia turns upon the control of two factors: the physical and the biochemical. The physical or mechanical occur above and below the glottis. The various causes of obstruction above the glottis are well recognized. Those below the glottis are not so well understood. The biochemical causes of asphyxiation are frequently lost sight of altogether.

It is pointed out that the most accurate measurement of the anesthetic is promptly thrown out in the face of obstructive complications. It is also pointed out that true asphyxia may also occur without cyanosis in the absence of adequate  $\text{CO}_2$  in accordance with the effect described by Bohr. A brief reference to the effect of the hydrogen ion concentration upon the tidal volume of the respiration is made in which the stabilizing factor is shown to be the consistent maintenance of the proportion of  $\text{H}_2\text{CO}_3$  to  $\text{NaHCO}_3$  in the circulation.

The relief of asphyxiation during anesthesia is pointed out as being both chemical and physical. The chemical control is exercised through the correct choice of pre-

medication and anesthetic agent. The physical by the correct use of the pharyngeal tube as well as a safe and efficient intratracheal inhalation tube which should possess the qualifications of a correct diameter, widest possible lumen, combined

with thinnest possible wall intubated by direct vision.

Continuous experience of six years has demonstrated the safety and efficiency of this technic.

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## THE TREATMENT OF ASPHYXIA IN CLINICAL DISEASE, WITH ESPECIAL REFERENCE TO RECENT DEVELOPMENTS IN THE USE OF OXYGEN IN HEART DISEASE

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Asphyxia is a general term employed to designate a serious form of oxygen want. The author's concern is especially the diseases of the lungs and heart in the course of which an abnormally decreased tension of oxygen is present in the tissues. Last year he had the privilege of presenting clinical data concerning 376 oxygen-treated cases from a study made at the Presbyterian Hospital.<sup>1</sup> In this communication it is intended to state the more general views based on these results and the author's previous experience in oxygen therapy, and to indicate frankly wherein they differ from those of others. In addition, recent developments of the use of oxygen in cardiac disease will be reported.

In lobar pneumonia, lobular pneumonia, and postoperative bronchopneumonia the occurrence of oxygen want is a relatively frequent incidence. This condition should be promptly treated by the inhalation of an oxygen-enriched atmosphere. Our knowledge of the physiological consequences of acute oxygen want is sufficiently definite as to leave no question in the author's mind that harm of a progressively grave character is the result of untreated increasing anoxemia. The treatment should be instituted when signs of anoxia first appear; it should be continuous and should be maintained until the patient has given satisfactory evidence that the disease process in the lungs has sufficiently cleared so as to provide a relatively normal diffusion of oxygen through them. The indication for treatment is not only the existence of a cyanotic color to the nails or finger tips. A pulse unusually high in respect to the patient's age or temperature, excessive dyspnea, the presence of severe coughing, anemia, and marked restlessness are other signs that point to the advisa-

bility of employing oxygen. Bullowa,<sup>2</sup> has emphasized criteria other than cyanosis that are especially valuable in the treatment of colored patients.

The concentration of oxygen in the inspired air should be stipulated in any order for oxygen treatment, for the dosage employed is of real importance. In most instances, it seems best to employ 50 per cent oxygen in a well-ventilated tent or chamber. However, there are especially severe cases in which concentrations as high as 70 per cent may be used until the anoxic condition of the patient seems relieved. Very rich oxygen mixtures, such as those between 80 and 100 per cent, have repeatedly been shown to produce irritant inflammatory lesions in the lungs when used continuously for two to three days or more, but concentrations under 70 per cent have no such influence.<sup>3</sup> Furthermore, there is no demonstrable *tendency* to produce edematous changes in the lungs when atmospheres containing less than 70 per cent oxygen are employed. The author has kept adult rabbits and infant rabbits, conceived and born in the oxygen chamber, continuously in a concentration of 60 per cent oxygen for three to four months without effect on the pulmonary epithelium. The use of oxygen concentrations between 90 and 100 per cent in human beings for long continuous periods is entirely unwarranted by present experimental data. The author has previously expressed his disagreement with the advice of Evans<sup>4</sup> to employ these very high concentrations.

In the absence of a tent in which air movement, temperature and humidity control are available, it is best to use a nasal catheter, generally with a flow of 5 liters per minute. At this rate of administration, the patient will receive between 35 and 38



per cent oxygen in the inspired air, depending on the character of his pulmonary ventilation. With mouth breathing, the catheter in the nasopharynx is less useful. Under these circumstances, it would be advantageous to adopt the suggestion of Wineland and Waters<sup>3</sup> to push the catheter downward into the posterior pharynx opposite the uvula. In a very limited experience with this latter procedure, it has been generally attended with a feeling of discomfort not complained of when the catheter is kept in the nasopharynx. It may frequently be possible to administer 7 to 8 liters oxygen through the catheter with a corresponding increase in the oxygen concentration of the inspired air, but these high rates of flow are apt to produce discomfort.

In most cases that present acute anoxemia, it is better to attempt to provide 50 per cent oxygen at the outset, allowing a margin of effectiveness beyond that just necessary to remove anoxemia. The measurement of the arterial oxygen saturation is too difficult to become standard for general clinical use. In the absence of a well-ventilated tent, the nasal catheter should be employed with a concentration approaching that of the tent where it is possible to do so. An oxygen tent that is not sufficiently comfortable and adequately equipped to provide hygienic atmospheric conditions in respect to air movement, temperature, and humidity had best not be used at all. In many cases the good results of effective oxygen therapy are obscured by the harmful effects of bad ventilation, or the patients themselves object to the treatment, which is then discarded.

The author also does not believe that the use of a mask is satisfactory. In his experience, it is generally productive of discomfort and furthermore, it is not possible to administer oxygen continuously and give the patient the frequent fluids he generally requires. The only three methods which therefore seem worthy of use are the oxygen chamber, a well-ventilated oxygen tent containing a mechanism for air movement, cooling, and dehumidification of the air, and the nasal catheter. The contribution of Wineland and Waters is of value especially for patients who breathe through their mouth; also their recommendations for higher flows of oxygen should be used in cases of severe anoxemia when a tent is not available and where the comfort of the patient is not disturbed thereby.

The value of oxygen treatment in acute respiratory disease is first of all a measurable relief of many of the symptoms of anoxemia. But one does not wholly comprehend the value of adequate oxygen treatment unless it is appreciated that the function of the vital systems of respiration and circulation may be sustained through the provision of an increased oxygen pressure in the blood and tissues in such a way as to afford the patient an opportunity of a greater length of life in which to overcome the toxemia of the disease. In a recent report the author<sup>6</sup> presented case histories in which new evidence was advanced for the thesis that effective organ therapy is capable of prolonging life and in that way contributes additional chances for the ultimate recovery of markedly anoxic patients.

It now becomes necessary to consider the view that pneumonia is a pneumococcal atelectasis, that an undesirable lack of carbon dioxide exists in the tissues of the pneumonia patient, and that mixtures of 5 to 7 per cent carbon dioxide in oxygen should be more generally employed. In papers by Henderson, Haggard, Coryllos, and Birnbaum<sup>7</sup> this attitude is upheld. The stimulation of deeper breathing is said to aid the clearing of the bronchi and thereby to tend to relieve the atelectasis, the Bohr effect of  $\text{CO}_2$  is considered to promote an increased tension of oxygen in the tissues and the acid action of carbon dioxide has been said possibly to aid in resolution of the pneumonic exudate.

The stimulus for the use of mixtures of carbon dioxide and oxygen may be traced to the work of Henderson and Haggard<sup>8</sup> in shock and anesthesia, in which they believed that a primary carbon dioxide deficiency was brought about by over ventilation during the excitement stage of anesthesia. Peters and Van Slyke<sup>9</sup> have stated that such a hypothesis is untenable. The effects of excessive artificial respiration in producing conditions of shock, which Henderson and Haggard attributed to the resultant carbon dioxide deficiency, have been explained by the deAlmeidas<sup>10</sup> as due, not to reduction of  $\text{CO}_2$  tension or to increase of pH, but to cooling and to dehydration, a view adopted by Peters and Van Slyke. The application of these theories of Henderson and Haggard, to the use of 5 to 7 per cent  $\text{CO}_2$  in pneumonia are thus open to question. In lobar pneumonia and in bronchopneumonia the

carbon dioxide dissociation curve is at times somewhat lowered, with a pH which has been found slightly on the acid or alkaline side but within the normal range in most instances (Barach, Means and Woodwell;<sup>11</sup> Hastings, Neill, Morgan and Binger.<sup>12</sup>) A number of cases have been treated with these high CO<sub>2</sub> mixtures but the absence of published studies of the CO<sub>2</sub> tension of the arterial blood has not made it possible to determine what actually happens to the blood of the individual being so treated. Clinically, observation of pneumonia patients exposed to these high CO<sub>2</sub> mixtures certainly has not given me the impression that they are in any way benefited by such a method.

Space does not permit to discuss in detail the view that lobar pneumonia has its origin in a plug of mucus obstructing a bronchus or that the acid action of CO<sub>2</sub> may possibly aid in the resolution of the pneumonic exudate except that it is necessary to say that the evidence presented for these views seems to the author quite inadequate upon which to base a proposal to substitute carbon dioxide and oxygen therapy instead of oxygen therapy, especially since the effects of doing so have not been adequately investigated by examination of the CO<sub>2</sub> tension and pH of the blood.

Not only in lobar pneumonia does it seem to be unnecessary and unwise to employ carbon dioxide in concentrations of 5 to 7 per cent, but also in postoperative pneumonia. This attitude is supported by the extensive study made at the Mayo Clinic on the use of oxygen therapy in postoperative pulmonary conditions by Judd, Boothby, and their collaborators.<sup>13</sup> Judd summarized his experience as follows:

"There can be no question that the use of oxygen is a valuable aid in the immediate postoperative care of patients for whom surgical treatment has been carried out on account of some serious abdominal conditions. Among other beneficial effects, I believe that an important one is a tendency to prevent the accumulation of mucus in the respiratory tract and decrease the tendency to pulmonary edema. When breathing oxygen, the patient with shallow breathing is much more comfortable and has a better color than when he is breathing ordinary air. Comfort is a very important consideration in these cases. From our experience with the use of oxygen postoperatively, and particularly following operations in the upper part of the abdomen, we are convinced that it plays an important part in the convalescence. We frequently use it for forty-eight hours after any serious operation to prevent an anoxemia from developing. After the

oxygen tent is removed, the patient often asks to have oxygen again, stating that it adds greatly to his comfort. We feel that there be no question that the use of oxygen postoperatively has a definitely favorable effect on the prevention and treatment of pulmonary edema and congestion. In our opinion, we have materially reduced the incidence of postoperative pneumonia since using oxygen therapy freely following major surgical procedures. It is without question an important aid in the treatment of pneumonia."

The statement of Judd is quoted at length because it illustrates the value of oxygen therapy in accomplishing what has been claimed for the administration of high carbon dioxide concentrations in oxygen. It may be pointed out that the oxygen that frequently builds up concentrations of carbon dioxide of 1 per cent as it is ordinarily used, and occasionally as high as 1.5 or 2 per cent. These concentrations of CO<sub>2</sub> do not cause deep breathing as is produced by the inhalation of 5 to 7 per cent CO<sub>2</sub>. In the author's experience, the presence of these small concentrations of CO<sub>2</sub> is associated with no evidence of harm or even discomfort. For over three years, at the Presbyterian Hospital, tents have been employed without soda-lime and reliance has been placed on a liberal flow of oxygen, 7 to 8 liters for maintenance and 15 liters per minute for purging when the flap of the tent has been opened, which is sufficient to cause adequate elimination of CO<sub>2</sub>. If a concentration of 50 per cent oxygen is desired in a patient (not an untreated experimental subject), we have found it necessary to use such flows of oxygen as will (incidentally) keep the carbon dioxide concentration down to reasonable limits. An exception might be made in the case of postoperative thyroidectomy patients in whom an even larger flow of oxygen might be necessary to keep the CO<sub>2</sub> down, or in these instances soda-lime might be used in the tent. At all events, the small concentrations of carbon dioxide which are built up in oxygen tents and chambers appear in concentrations of 5 to 7 per cent CO<sub>2</sub> to stimulate the breathing noticeably.

In the recent pneumothorax treatment of pneumonia, collapse of the affected lung is frequently followed by a swift termination of the disease, if early cases without bacteremia are selected. It is apparent that this is a procedure quite opposite to the expansion of pulmonary air spaces and bronchial tubes which the inhalation of 5 to 7 per cent CO<sub>2</sub> concentrations is said to achieve. The author has seen the charts

of 8 patients and personally observed 2 cases treated at the hospital in which collapse of the affected lung was followed by crisis on the third or fourth day of the disease\*. The pneumothorax, which was obviously responsible for the resolution of the disease, has an effect quite opposite to that of the inhalation of 5 to 7 per cent  $\text{CO}_2$ .

Hanson and Calloun made a report on 27 cases of lobar pneumonia treated with carbon dioxide and oxygen. The authors state that 4 normal persons who inhaled 95 per cent oxygen and 5 per cent carbon dioxide, using a mask, for periods of ten minutes, had the experience of feeling slightly faint at the end of the period but recovered quickly without any ill effects. The pneumonia patients were treated twice a day for ten minutes each time, no patient being selected whose illness exceeded three days. The authors concluded that early pneumonia could not be aborted with the technique they employed. The contrast between their negative results in this respect and that of pneumothorax in early cases is sufficiently striking as to make it additionally doubtful that forceful expansion of the bronchial pathways through the employment of these high  $\text{CO}_2$  mixtures is desirable†.

The therapeutic effect of oxygen in chronic pulmonary conditions such as emphysema, pulmonary fibrosis, and the fibrosis of pulmonary tuberculosis has been investigated by Richards and Barach<sup>15</sup>. The results of treatment in these conditions are somewhat similar to our findings in chronic heart disease with the exception that more favorable responses are apparent in certain types of cardiac disorder after a shorter period of treatment than we obtain in end stage fibrotic pulmonary disease. In a forthcoming paper it was demonstrated that compensation in chronic congestive failure especially that associated with sclerotic conditions in the myocardium, or in the coronary artery, may be restored by oxygen therapy, even when all

other measures had failed. It may be said at the outset that oxygen therapy should not be employed to the exclusion of other measures in a clinical usage, the author's investigative attitude made it necessary at times to exclude other remedies when he employed it or to wait until other remedies had been found inadequate to restore compensation. Before turning wholeheartedly to the discussion of the use of oxygen in heart affections it may be mentioned that the chronic pulmonary patients have been also restored to a state of compensation in which ambulatory existence was possible, but in these patients the recurrence of the need for oxygen was more frequently present than in the patients with congestive failure due to an etiology exclusive of rheumatic fever. The benefit was in some cases quite lasting, as shall be seen presently.

In earlier publications Richards and the author<sup>16</sup> pointed out that relief of dyspnea began in the first several hours of exposure to 50 per cent oxygen, that restlessness and insomnia were apt to be relieved in the first twenty-four hours, and that a diuresis generally began in the successfully treated cases between the third and the sixth day after oxygen treatment was begun. Further experience has confirmed these observations and has made it more clear that the cases of heart failure in whom there is evidence of an active rheumatic process are not apt to respond to oxygen therapy with a diuresis or with a recovery of compensation. What improvement does take place in the oxygen room or tent in the presence of 50 per cent oxygen is generally lost in the case of patients with active rheumatism on return to atmospheric air. However, in cases in which no evidence of active rheumatism is found or in which the basic cause of the heart failure is a myocardial fibrosis due to sclerotic changes in the coronary artery or to fibrosis in the cardiac muscle itself of undetermined etiology, the results of treatment may be to usher in quite promptly within several hours an increased consciousness of well-being, relief of dyspnea, restlessness and insomnia, and the development of diuresis from the third to the sixth day after onset of oxygen therapy. Thus diuresis continues until the patient is free from edema, in favorable cases in two to three weeks of treatment.

\* The charts were observed as part of a study reported by Francis Blake, *Pneumothorax Treatment of Lobar Pneumonia*, at the Association of American Physicians, May 2, 1934.

† In a recent English communication by Hilton further doubt concerning carbon dioxide therapy is expressed by the author's statement that, "The practical conclusion of this paper is that in the absence of respiratory failure as evidenced by shallow breathing the clinical effects of  $\text{CO}_2$  administration in air are not sufficiently demonstrated by these observations to warrant its routine use in lobar pneumonia."—Hilton R., *Brit Med Jour* 1, 416, 1934.

If oxygen therapy is withdrawn before completion of diuresis, there is a real danger of re-accumulation of edema.

There is first noticed in the case of congestive heart failure admitted to the hospital a greater intake of fluids than an output of urine, if the patient is still decompensated. Three to six days after oxygen treatment is begun, a reversal of the trend takes place, *i. e.*, a greater output of urine than intake of fluids. The concentration of oxygen is maintained at the level of 50 per cent, until in the course of two or three weeks, it is observed not only that there is no longer any clinical edema but also that the intake of fluids becomes again greater than the output of urine. It is then likely that diuresis is approximately complete. The oxygen concentration of the tent may then be gradually lowered in the course of two or three days to 25 or 30 per cent and the tent removed. Frequently, the nasal catheter is used to accomplish a more gradual tapering-off process.

In favorable cases, the patient continues to gain strength and returns home capable of ambulatory activity.

Richards and the author have also been interested in the treatment of patients with cardiac insufficiency before a complete breakdown of compensation takes place. Our information on this subject is still too meager to lay down any general principles. However, in one patient, a colored man of 62 years who had a myocardial fibrosis and a two- and one-half-year history of increasing cardiac insufficiency, oxygen treatment for three weeks was provided before the stage of complete breakdown. At that time, he could not walk half a block before he had to stop because of dyspnea. At the end of oxygen treatment he was gotten up progressively on the ward and returned home. He was able to walk one to two miles at a time each day without dyspnea, and remained in good condition for one year, when a cold temporarily reduced his compensation. He is still in relatively good condition, one and one-half years later.

In these cases the most characteristic occurrence is a marked increase in the  $\text{CO}_2$  content of the arterial blood, which may rise 50 per cent above the pre-oxygen treatment level and in the chronic pulmonary cases 100 per cent above the carbon dioxide content without oxygen. This elevation of the amount of  $\text{CO}_2$  in the arterial blood is not dependent on the inhalation

of the small amount of  $\text{CO}_2$  present in the tent and the chamber. The author has kept dementia praecox patients for two and a half months in 50 per cent oxygen with 3 per cent  $\text{CO}_2$  and occasionally 4 per cent  $\text{CO}_2$ , without any real effect on the  $\text{CO}_2$  content of arterial blood.<sup>17</sup> The increased amount of  $\text{CO}_2$  in the blood is also not an evidence of a carbon dioxide acidosis, as the pH is normal. Without attempting fully to explain this phenomenon it can be pointed out that a higher tension of  $\text{CO}_2$  in the blood makes for a more rapid elimination of  $\text{CO}_2$  into the alveolar air, and a larger excretion of  $\text{CO}_2$  per unit of air breathed. When the pulmonary ventilation is reduced, because of the provision of the increased oxygen tension in the blood and tissues, an apparently adaptive mechanism takes place, *i. e.*, the organism elevates the level of  $\text{CO}_2$  in the blood, since at the higher levels it can eliminate carbon dioxide more efficiently. The expired air of the patient may thus contain 7 to 8 per cent or even higher concentrations of  $\text{CO}_2$ , demonstrating a remarkable capacity of the organism to get rid of carbon dioxide, even through congested, edematous or fibrotic lung tissues. If the want of oxygen is overcome, the lung may eliminate per unit of breathing more than twice its customary amount of carbon dioxide at a normal hydrogen ion concentration. Previous investigation<sup>18</sup> which emphasized that a carbon dioxide acidosis was responsible for cardiac dyspnea, as well as those which were negligent of the factor of anoxemia<sup>19</sup> appear to be unsupported by the results the author has obtained. Other workers, such as Beddard and Pembrey,<sup>20</sup> Porges,<sup>21</sup> Campbell and Poulton,<sup>22</sup> grasped more correctly the importance of the anoxemic factor, which our studies of the ease of disposal of  $\text{CO}_2$  in the presence of effective oxygen therapy tends to confirm.

The primary difficulty then in disturbance of cardiac and pulmonary function is the presence of an inadequate tension of oxygen in the tissues. The author does not mean to exclude mechanical factors such as the increased weight of passively congested lungs or restricted volume capacity of the lungs but to focus attention on the purpose of the respiratory system to deliver  $\text{O}_2$  and eliminate  $\text{CO}_2$ , and to point out that the disturbed function which makes for dyspnea is difficulty in delivering an adequate supply of oxygen and not

in eliminating an adequate amount of  $\text{CO}_2$ . The provision of oxygen in passive congestive failure with anoxia often acts like a specific remedy, steadily overcoming the symptoms and the signs of cardiac insufficiency. Withdrawal of oxygen before a state of compensation has been achieved provokes a sharp and at times a severe breakdown in the obvious functions of both respiration and circulation. The secondary function of these symptoms, the elimination of  $\text{CO}_2$ , is, however, accomplished promptly when the needs of the organism for oxygen are met. The statements that refer to the difficulty of getting rid of  $\text{CO}_2$  through edematous or damaged lungs must now be viewed as theoretical assumptions not borne out by the fact that damaged lungs even in the presence of heart disease can afford an outlet to twice the customary amount of carbon dioxide per unit of air breathed. This is achieved through the maintenance as long as it is required, of a high arterial  $\text{CO}_2$  content.

The use of high concentration of carbon dioxide is productive of acute discomfort in these patients, dyspnea of such a character as to make it intolerable.<sup>23, 24</sup> It should be mentioned that there is no evidence that definite  $\text{CO}_2$  deficiency takes place as a result of overventilation in the dyspnea of heart disease. At times the pH turns slightly in the direction of alkalosis, but more often it is normal or within a relatively normal range. Our results show, moreover that the body is fully capable of conserving its carbon dioxide if its demands for oxygen are met, as exemplified by one patient with chronic pulmonary disease whose arterial carbon dioxide content rose to a height of 132 vol per cent. It may be that small concentrations of  $\text{CO}_2$ , such as 1 and 2 per cent in the presence of 50 per cent oxygen may enhance the effectiveness of oxygen by increasing the movement of oxygen from the blood to the tissues (the Bohr effect). The author's experience with higher concentrations of  $\text{CO}_2$  is that discomfort and increased dyspnea are produced. The enormous building up of carbon dioxide in the arterial blood as a result of the provision of oxygen therapy, is a demonstration of the capacity of the patient in dyspneic conditions to maintain a high  $\text{CO}_2$  level if his primary difficulty, the lack of oxygen, is met.

In acute coronary thrombosis Levy and the author<sup>25</sup> have observed additional pa-

tients in whom the inhalation of 50 per cent oxygen aided the function of the heart damaged by anoxemia and shock, in this way augmenting the chances of ultimate recovery. The author has also seen additional cases of chronic original pain in which the inhalation of oxygen relieved the patients of pain during the period of residence in the oxygen atmosphere. Also, at this point the author must express his doubt of the efficacy of high  $\text{CO}_2$  concentrations in the treatment of angina pectoris and voice his disagreement with the statement<sup>26</sup> that 'For the treatment of angina pectoris and for use on patients after anesthesia and surgical operations, oxygen is unnecessary'. The extension of carbon dioxide therapy from its employment during anesthesia to clinical disease characterized by oxygen want must be squarely faced by both physiologists and clinicians. Both from the standpoint of theoretical evidence and actual experience, a halt should be called to the use of 5 to 7 per cent carbon dioxide, except in those conditions in which there is evidence of an insensitive respiratory center, such as drowning, carbon monoxide poisoning, drug poisoning, and so forth. It should also be admitted that the efficacy of  $\text{CO}_2$  therapy in carbon monoxide poisoning is not merely due to stimulation of ventilation but, as Stadie and Martin<sup>27</sup> pointed out, to the displacement of CO by  $\text{CO}_2$ . The author wishes to acknowledge the great value of the work of Henderson and Haggard in emphasizing the usefulness of  $\text{CO}_2$  in conditions where a depressed state of the breathing is apparent, such as carbon monoxide poisoning but its extension by them and others following their foot steps to pulmonary and cardiac illnesses which are already characterized by dyspnea seems to us unwarranted.

In atelectasis of the lungs of the newborn, the use of 5 per cent  $\text{CO}_2$  to cause expansion of the lungs is undoubtedly valuable, as Henderson<sup>8</sup> states especially if obstructive lesions have been removed (Flagg<sup>20</sup>). High  $\text{CO}_2$  mixtures should be used only intermittently in these conditions, sufficient to stimulate breathing, and reliance should be placed upon the provision of a 50 per cent oxygen environment to maintain an adequate oxygen supply until the lungs expand sufficiently to do without this oxygen. If the breathing has been instituted with 5 or 10 per cent  $\text{CO}_2$  the inhalation of 50 per cent oxygen may be

sufficient from then on, or it may seem wise to give further short inhalations of carbon dioxide. It is generally unnecessary to keep the child in a continuous environment of 5 to 7 per cent  $\text{CO}_2$ . There is often no indication to continue high carbon dioxide concentrations, especially since oxygen with 2 or 3 per cent  $\text{CO}_2$  will frequently maintain the pulmonary function adequately without it.

Finally the use of oxygen in connection with thyroidectomy for various forms of heart disease, as recommended by Blumgart, Levine, and Berlin<sup>30</sup> should be mentioned. It is not the purpose of this paper to discuss the results of thyroidectomy. Observations by Richards, Caughey, Parsons, Barach, and others are being made in an attempt to evaluate this procedure. However, the program of treating these patients may be mentioned. It consists of a period of preoperative oxygen treatment designed to put the patient in the best possible condition. If he has cardiac insufficiency, he is placed in the oxygen chamber for 2 or 3 weeks, or until he shows evidence of compensation. Even if a state of compensation is present, four to five days in the oxygen room are provided with the idea that an additional support to the cardiac muscle is thereby achieved. The operation is performed with the patient receiving 5 liters of oxygen per minute by nasal catheter, following which he is returned to the oxygen room for approximately five days, when the oxygen is gradually lowered during the course of two days and the patient returned to atmospheric air. The theoretical basis for this procedure rests on the results of Richards and the author<sup>10</sup> in which the effects of oxygen-enriched atmospheres on circulatory function have been demonstrated. The mortality of cardiac patients exposed to operation, including those other than thyroidectomy, has been greater than that of the noncardiac. We are hopeful that we have developed a method which will materially reduce the mortality of cardiac patients exposed to serious operation. In the early part of this paper Judd's experience was quoted, in which he believed that the operative surgical mortality was reduced by placing patients in an oxygen environment immediately after operation. Our proposal is an extension of this principle to the actual period of operation, and also to a preoperative period during which the reserve or

the function of the heart may be improved. The postoperative course in the 6 cases which have been done by Dr. Parsons has been so exceptionally smooth that we have been led to the belief that anoxic shock has been averted, and that the hazard of the operation has been thereby reduced.

#### SUMMARY

Observation of the use of effective concentrations of oxygen in lobar pneumonia and bronchopneumonia over a period of fourteen years justifies the view that (1) the symptoms of oxygen want are frequently thereby relieved, and (2) that in some cases the function of the lungs is sustained by the provisions of an increased oxygen supply. Both these effects increase the opportunity for ultimate recovery of the anoxic patients suffering from acute respiratory disturbances.

The method by which oxygen is administered is of great importance. A well-ventilated oxygen chamber or tent seems preferable to other methods. A tent which is inadequately equipped with a mechanism for air motion, reduction of temperature and humidity of the enclosed atmosphere should be abandoned in favor of the nasal catheter which, although less desirable than a well-ventilated tent, is to be preferred to one in which hygienic conditions of atmosphere control cannot be maintained. The nasal catheter may be employed with moderate effectiveness.

Recommendations in the literature for a more extensive use of carbon dioxide in concentrations of 5 to 7 per cent in lobar or bronchopneumonia appear to the author unsupported by the theoretical and clinical evidence now available. This type of therapy, in the author's opinion, should be employed in the conditions in which depressed respiration is present, such as CO poisoning, submersion, and so forth, in which its value has been fully substantiated.

The effectiveness of oxygen therapy in cases of congestive heart failure, its capacity to accomplish a restoration of compensation, has been demonstrated by Richards and the author. It has been found especially marked in those patients who are free from an active rheumatic process. Patients with degenerative forms of heart disease characterized by myocardial fibrosis or patients whose myocardial failure is secondary to coronary arteriosclerosis have shown great improvement as a result of oxygen treatment for two to four weeks.

Its influence in chronic pulmonary conditions such as emphysema, pulmonary fibrosis, and the fibrosis due to end-stage tuberculosis is similar, with the exception that longer treatment is necessary and recurrence of oxygen treatment more frequently needed.

The use of oxygen in acute coronary thrombosis has been further observed by Levy and the author with a confirmation of the view that oxygen treatment may be of great importance in this condition because of its sustaining influence on cardiac muscle function.

Oxygen has been used in the course of an investigation of the influence of thyroidectomy in various forms of heart disease. A preoperative period of oxygen treatment was instituted to obtain the highest degree of compensation possible before operation. Oxygen was administered during the operation. A postoperative period of oxygen treatment was employed to avert the consequences of abrupt anoxemia. The favorable postoperative appearance of the 6 patients so treated suggests the use of a similar procedure in cardiac patients exposed to other operations.

Evidence is presented which indicates that oxygen treatment plays a critical rôle in the causation of cardiac dyspnea and the dyspnea of chronic pulmonary disease. The relief of dyspnea and the restoration of compensation in these conditions may be accomplished in selected cases by appropriate oxygen treatment in these cases an elimination of  $\text{CO}_2$  as high as twice the normal concentration suggests that there is no inherent difficulty in passing  $\text{CO}_2$  through the lungs, even in the congested, edematous, or fibrotic state.

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#### ABSTRACT OF DISCUSSION

DR. JOHN H EVANS. Dr Barach is entitled not only to the thanks but also to the sympathy of the medical profession. Thanks are due him for the strenuous efforts he has made during the past several years to find out the therapeutic value of oxygen. He is deserving of sympathy because he has been working under the self-inflicted handicap of limited dosage.

As a consequence, he has been forced to stand helplessly by and see many of his patients die of asphyxia which his dosage of 40 to 60 per cent oxygen was unable to correct.

The dosage of 40 to 60 per cent oxygen has been arbitrarily fixed by conscientious laboratory workers who conceived the ingenious but erroneous idea that the requirements of a patient suffering from asphyxia could be accurately measured by the tolerance of a healthy animal to oxygen.

They concluded from their experiments that no more than 60 per cent should ever be administered continuously to a patient suffering from anoxemia. If this percentage failed to restore the blood oxygen to normal, that was the patient's hard luck.

Although they found that normal rabbits could safely inhale 60 per cent oxygen for as long as four months they decided 40 per cent was as high a percentage as should be given mild cases of asphyxia. It has always been a mystery to me why the proven safe dose of 60 per cent should be reduced exactly 33 1/3 per cent. It was low enough before this bargain day reduction.

Oxygen is the only therapy which is handicapped by arbitrarily fixed dosage. In all other fields there is no limit placed upon the dose, enough being given to produce the desired results. The effect that the dose might have on normal persons is never taken into consideration. Often it is so large that it would be harmful or even fatal if given to a person in whom the treatment was not indicated.

The purpose of oxygen therapy in cases of anoxemia should be the restoration of normal blood oxygen. If it falls short of this objective, it cannot be considered successful. That 40 to 60 per cent oxygen is not capable of accomplishing this most desirable result in all cases is evidenced by published reports on its use.

In analyzing, for example, Dr. Barach's 1929 report of 100 cases of pneumonia we find that these percentages were successful in only 51 per cent of cases. Among the 49 per cent of failures were 36 cases in which the blood oxygen was from 11 to 16 per cent below the normal level and in 9 cases the failure was so great, namely, 16 to 21 per cent below, that death was almost certain to result from the uncorrected asphyxia. All of the 9 died.

Barcroft has shown that even a reduction of 8 per cent in the normal blood oxygen is followed by serious symptoms.

In view of this high percentage of failures it would seem that Dr. Barach is too optimistic when he states that 40 to 60 per cent oxygen restores the arterial blood oxygen of anoxic patients "to or near the normal value."

I hope that Dr. Barach will explain why normal animals were chosen as the criterion to measure dosage.

If the experiments had been carried out on animals suffering from asphyxia, I am sure that the percentage finally agreed upon would have been much higher. I base this statement on deductions drawn from a series of over 400 cases of asphyxia to whom we have administered 80 to 100 per cent oxygen.

The asphyxia in these cases was associated with pneumonia, cardiac decompensation, pulmonary emboli, coronary thrombosis, fibrosis of the lung, asthma, respiratory failure in infantile paralysis, postoperative anoxemias, and carbon monoxide poisoning.

The great majority of these cases were given 100 per cent oxygen by means of the face mask or nasal inhaler. Many of them inhaled the oxygen for from several days to as long as four weeks with as little interruption in the treatment as possible. The tests made when the nasal inhaler or face mask were used invariably showed the oxygen percentage to be above 90.

We have had several patients who developed cyanosis while inhaling 40 to 60 per cent oxygen given by the tent method. The cyanosis disappeared as soon as 100 per cent oxygen was administered with the mask. This was followed by an improvement in the patients' general condition.

Our best results have been obtained with the oxygen as near as possible to 100 per cent. This applies to the mild as well as to the severe cases of anoxemia.

When we are called to administer oxygen on the first day of a pneumonia we now give 100 per cent continuously throughout the course of the disease regardless of whether cyanosis is present or not. We find that there is increased comfort for the patient and in some cases it

seems that the course of the pneumonia is shortened or even aborted.

We have found that 100 per cent oxygen is a marked respiratory sedative, greatly reducing the cough or abolishing it altogether. There has been no evidence that it was irritating or that it was harmful in any way even when given continuously for long periods of time.

It has now been several years since Dr. Sayers demonstrated that 100 per cent oxygen could be safely inhaled by normal animals for at least 16 hours a day for at least 50 consecutive days. Inasmuch as Dr. Sayers has met the requirement of selecting normal animals for his experiment, I cannot understand why Dr. Barach does not take advantage of the information thus gained and permit all of his patients to enjoy a pink color with normal blood oxygen for at least 16 hours a day.

It has been unfortunate for the asphyxiated patient that reports have been so widely circulated branding 80 to 100 per cent oxygen as a poison and a respiratory irritant.

The diabetic, on the other hand, has been more fortunate as the death-producing effects of insulin have been screened by the term "reaction" and there has been no one in high authority to curtail the dosage. Many times the dose that would prove fatal to a person with normal blood sugar is not infrequently given to the diabetic patient. With insulin, the good old-fashioned rule of therapeutics has been allowed to hold sway, namely, to govern the dose by the needs of the patient. Enough is given to bring the blood sugar down to the normal range regardless of the number of units required or its effects upon a healthy animal or person.

In applying oxygen therapy to cases of asphyxia the same principle of dosage should be employed, namely, to give to restore the blood oxygen to normal. If this cannot be accomplished by inhaling 100 per cent oxygen, which very rarely happens, it may be advisable to administer it subcutaneously.

The ability of oxygen to reduce the heart and respiratory rates increases as the percentage of oxygen is increased. Hence the advisability of administering 100 per cent in all cases of pneumonia and cardiac decompensation, even though the cyanosis is abolished with lesser percentages.

When 100 per cent oxygen is administered continuously to the asphyxiated patient the effects are quite different to those produced in normal animals in which oxygen therapy is not indicated.

Instead of being a death producer it is often a life saver; instead of being a pulmonary irritant it is an excellent sedative; instead of producing edema of the lungs, it is beneficial for this condition, either reducing it or abolishing it altogether; instead of causing a pneumonia it is helpful in warding it off and is the best therapeutic agent we have for an already existing pneumonia.

DR. BARACH: The argument of Dr. Evans that investigations of the effect of pure oxygen in animals applies only to normal lungs and would therefore not apply to diseased lungs seems fallacious to me. The pneumonia patient may have only one or two lobes involved, and the rest of his lungs normal. There is every reason to believe that pure oxygen administered for two or more days would cause pulmonary irritation and edema in these normal lungs. Dr. Evans believes he had given pure oxygen continuously



for days without harm. It is difficult to administer pure oxygen continuously with a mask and at the same time provide medicine, food and fluids. From the work of Sayres one would be justified in concluding that even these very high oxygen concentrations could be borne 16 hours out of 24 without apparent harm.

Dr Evans' criticism of my early results employing 40 per cent oxygen reveals that in some of the cases the arterial oxygen saturation was not elevated to the normal level. In some of

them the passage of blood through unventilated lung might have made it impossible to raise the oxygen concentration entirely to the range of normal. In others however it is probable that the use of 60 per cent oxygen would have obtained a better result. I would consider it safe to use even higher concentrations of oxygen for a matter of some hours but I believe it dangerous to employ continuously concentrations of over 70 per cent for any period over two days.

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## THE LINGUAL DEATH ZONE IN ASPHYXIA

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Death from asphyxia means death from want of oxygen and carbon dioxide in the tissues. The only practical way to get these gases permeated throughout the tissues is through the arteries. The question then is how to get these gases into the blood. Some day we may be able to put them directly into the circulating streams with a syringe but at the present time the only practical method is the normal way, via the lungs. We must, then, pipe the gases down into the tracheobronchial tree. It is seen at once that the essential thing is to keep these pipes open. The passageway down to the tracheobronchial tree is just as vital to the patient in impending asphyxia as is the tube that pipes air down to the diver when he is under water.

**LINGUAL CHECK-VALVE ACTION IN THE DEATH ZONE**—Though the dropping back of the tongue is a well known danger, it does not seem to be realized that the obstruction is of the *check valve* type. Worst of all is the fact that the check valve is set against ingress of air. Air and gases in the lungs may get out, but no air can get in.

The greatest menace to the patient in danger of death by asphyxia is the *lingual check valve*. Included in this *death zone* are two anatomical elements, namely, the pharynx which forms a funnel, and the tongue which on dropping back fills that funnel. The funnel forms a valve seat and the tongue forms a flapper, like the flapper of a check valve. The tongue is heavy and it is not held in place by any ligament, its only support is the muscles. In all forms of profound unconsciousness the muscles relax and the tongue has a strong tendency to go backward by gravity, when it does so, it shuts off completely

the entrance into the lungs. This constitutes the *death zone*.

Fundamental then to all efforts to avert impending death by asphyxia is *elimination of the lingual check valve*.

**HOW ARTIFICIAL RESPIRATION MAY KILL THE PATIENT**—It does not seem generally to be realized that when the tongue drops back into the pharynx, it constitutes a check valve preventing the ingress of air but permitting the forcing out of air from the lung. Therefore when the attempt is made to use artificial respiration without first seeing that the tongue is drawn forward, the pressure on the chest walls will force the air out of the lung, but the inspiratory phase, expanding the thorax to draw in air, is unsuccessful because the air intake through the larynx is occluded by the dropping back of the tongue. This forcing out of air with the inability to take in any air results promptly in bilateral pulmonary atelectasis and immediate death.

**KINDS OF ASPHYXIAL DEATHS FROM THE LINGUAL CHECK VALVE**—We have in general two classes of cases in which the death zone should be considered. (1) Those in which the primary obstruction causing the asphyxia is located in the death zone for instance a tumor, cancer, foreign body, garroting, suicidal hanging, the baby who has never yet breathed (asphyxia neonatorum). It also often occurs in the course of administration of chloroform and ether and other inhaled anesthetics and some of the poisons. (2) Those cases in which there is apnea from the effect of gases, electric shock, and other general causes. The death zone comes in as a secondary factor and will

assist in killing the patient if it is not properly dealt with and eliminated at the start *before any attempt is made at artificial respiration*.

**LINGUAL CHECK VALVE IN SLEEP.**—The only reason why we do not all die in our sleep is that we waken before we asphyxiate. Just as soon as the tongue drops back against the posterior wall and fills the pharynx, closing off the upper laryngeal orifice we waken and with resumption of partial consciousness the tongue goes back to its proper place. When, however, due to any cause such as alcohol, drugs, etc., the sleep is unusually profound, the patient may not waken. Undoubtedly many of the cases of death attributed to cardiac failure in alcoholism are really due

the chest is compressed before the tongue is drawn out. Of course, experienced anesthetists usually elevate the tongue by raising the jaws and no drawing out of the tongue is necessary. Intratracheal insufflation anesthesia, obviously, overcomes all difficulties with the death zone. Dr. Paluel J. Flagg has introduced a method of insertion of a closely fitting rubber tube in the larynx giving the anesthetist a complete airway to the lungs with which nothing can interfere. This is a most perfect method from the mechanical point of view and in clinical practice it is daily yielding wonderful results.

In *apnea* there is primarily no obstruction; but as soon as unconsciousness supervenes the lingual check-valve action will kill the patient if it is not eliminated.

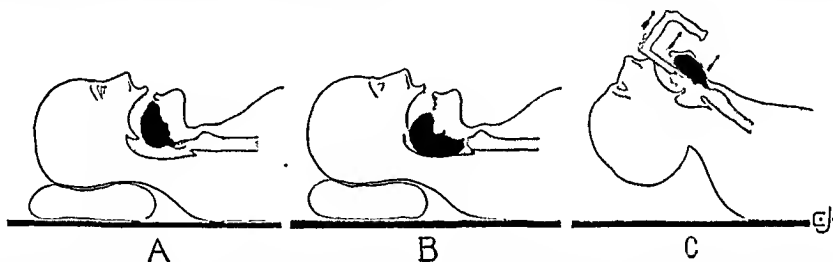


Fig. 1.—The Death Zone. *A*, Normal position of the tongue. *B*, In the relaxation of impending asphyxia the tongue drops backward obstructing the ingress of air. If artificial respiration is started with the tongue in this position, the patient will be killed by the pumping of air out of the lung on the compression stroke and no air can enter on the inspiratory stroke; the tongue forms a check valve permitting passage in one direction only. For artificial respiration the tongue should be drawn forward with tongue forceps or the

fingers covered with a handkerchief or gauze; but the best way to open up this death zone is with the direct laryngoscope as shown at *C*. Oxygen and carbon dioxide can then be insufflated. Every ambulance and every accident ward should be equipped with a direct laryngoscope, a 5 mm. bronchoscope, and a tank of oxygen with 5 per cent carbon dioxide. An aspirator for secretions would be useful, but in an emergency gauze or even a handkerchief can be used to clear secretions out of the death zone.

to asphyxia, the result of the lingual check-valve action above described.

**SUCTION IN THE DROPPING BACKWARD OF THE TONGUE.**—In addition to gravity, suction is a factor in the death zone. Suction may be due to absorption of air but chiefly to inspiratory movements. It is cumulative in the sense that the farther back the tongue goes the greater the power of suction becomes, because of a tighter fit.

The *death rattle* is sometimes caused by the bubbling of secretions; more often it is the final flapping of the lingual check valve. Dropping back of the tongue is the final stage in the death of anyone dying from any cause in the recumbent position.

**THE DEATH ZONE IN ANESTHESIA.**—Keeping the death zone clear is so well known to all anesthetists that nothing need be said beyond calling their attention to the check-valve action by which bilateral atelectasis and asphyxia is completed if

**RHYTHMIC TRACTION ON THE TONGUE.**—It is in many ways unfortunate that the rhythmic traction on the tongue was proposed in the way it was. It may be true, and it probably is true, that rhythmic traction on the tongue has a tendency to stimulate respiration; the unfortunate thing is that attention has been drawn away from the entirely different reason for drawing the tongue outward, namely, the elimination of the death zone and its check valve action, which require that the tongue be drawn out and held out.

**THE DEATH ZONE IN ARTIFICIAL RESPIRATION.**—One of the chief reasons for a greater success of the prone-pressure method as compared to the Sylvester and other early methods is that the position with the face turned downward, even though somewhat sidewise, permits the tongue to drop away from the posterior pharyngeal wall and from the orifice of the larynx so as to eliminate the death

zone Of course, it is always stated in the instructions for the use of any method of artificial respiration that the mouth must be cleared of secretions, and the tongue must be drawn forward In practical work, however, only too often, the tongue is neglected either altogether or until the patient has been killed by the compression stroke which has emptied the lungs and left them in a collapsed state because the check valve of the death zone has prevented any air entering on the inspiratory stroke

**THE PULMOTOR AND OTHER AIR PRESSURE METHODS**—Unless great care is taken to draw the tongue forward and keep it forward, the effect of the pulmotor and similar pressure methods is to force the tongue backward and to increase the certainty of death by the lingual check valve mechanism Of course, this does not apply to pressure methods that are used in combination with the laryngoscope to open the airway

**THE LARYNGOSCOPIC METHOD OF ELIMINATION OF THE DEATH ZONE**—Of all methods of eliminating the death zone and resuscitation of the patient the best is the clearing of the airway with the direct laryngoscope The spatular end of the instrument is inserted back of the tongue and then the patient's head is raised by a lifting motion of the instrument in the direction of the darts (Fig 1, C) The technique is quite simple in the limp condition in which a patient always is when asphyxia is impending The chief thing to remember is that the patient's head must be suspended on the spatula as shown in the illustration The operator can then see the larynx, see that there is no obstruction in it, and can insert a bronchoscope for clearing out of the secretions and for the insufflation of oxygen with carbon dioxide mixture right down to the air vesicles This is the cleanest, quickest, most logical and mechanically the soundest way of forcing the vitally necessary gases down to where they can be taken up by the pulmonary vessels and distributed to the tissues

#### SUMMARY

- 1 Fundamental to all efforts to avoid impending asphyxia is the elimination of the deadly lingual check valve
- 2 The best way to eliminate the lingual check valve is by direct laryngoscopy (Fig 1, A) With the patient on his back the

direct laryngoscope is inserted backward until it touches the back wall beyond the tongue Then by a lifting motion the head of the patient is hung up on the cylindrical part of the instrument This brings the tongue away from the back wall of the throat so as to allow air to get down back of the tongue into the larynx This constitutes the elimination of the deadly lingual check valve

3 The bronchoscope is introduced into the larynx and trachea through the laryngoscope The oxygen tube should not be connected to the bronchoscope until after the oxygen has been turned on and the pressure regulated Otherwise a heavy discharge of oxygen might occur

4 Aspiration of secretions through the laryngoscope or bronchoscope prevents the patient drowning in his own secretions

5 If the means for doing direct laryngoscopy are not at hand, artificial respiration is the alternative The best method of using it is known as the prone pressure method, but regardless of the method used, it is necessary always to remember the deadly lingual check valve, eliminate it by seeing that the tongue is drawn out and held out

6 The necessary equipment for the prevention of asphyxial death that should be in every ambulance and every accident ward is as follows

- 1 direct laryngoscope,
- 1 bronchoscope, 5 mm by 30 cm of full lumen aspirating pattern
- 1 tank filled with oxygen containing a 5 per cent mixture of carbon dioxide,
- 1 piece rubber tubing, about 4 ft long attached to tank outlet

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#### ABSTRACT OF DISCUSSION

DR E T BUTLER Elmira, N Y Dr Jackson has aptly described the crossroads of the alimentary and respiratory tracts Crossroads are frequent scenes of accidents and it is no exaggeration to state that the anatomical crossroads in question are responsible for many fatal mishaps

In addition to the tongue other factors may cause mechanical obstruction—edema of the glottis, foreign material, and inflammatory reactions in peripharyngeal structures These factors cannot be as easily managed as the tongue More skill and more elaborate equipment will be necessary

A word as to the technic of tracheotomy is not amiss. It is often carried out amidst venous engorgement and the struggles of a half asphyxiated patient. If, as a preliminary step, a bronchoscope can be inserted well into the trachea, respirations will be quieter, venous engorgement will be diminished and the trachea will be located without the slightest delay. All bleeding can be controlled by ligature and a dry wound secured before the trachea is opened and the tracheotomy tube inserted.

DR. YANDELL HENDERSON: I wish first to express my appreciation of the opportunity, as a guest of the New York Medical Association, to participate in this discussion.

I wish also to join with Dr. Jackson in the pleasure that it gives us both that the subject of asphyxia and resuscitation from asphyxia has received consideration in this discussion. Dr. Jackson from his side—that of bronchoscopy—and I from mine—that of inhalational treatment—have worked for 25 years to interest the medical profession in this subject. And this discussion this morning shows that at last the profession is interested. Now progress should be rapid.

I missed Dr. Flagg's paper, but I know that he presented his device and technic for the passage of a sound into the trachea for the administration of insufflation of oxygen and carbon dioxide. And I can testify to the practicality and effectiveness of this method of resuscitation. He showed me just once how to use his device, and I was able immediately without the least difficulty to bring

a baby's glottis into view and to pass a sound into it. The operation is extremely simple. Dr. Flagg has rendered a great service in developing his device and technique and in bringing it to general attention.

As regards Dr. Barach's paper, I wish first to testify to the great value of the work he is doing in developing the clinical application of inhalational therapy for pneumonia, and for cardiac diseases, in which there is a condition of chronic asphyxia. I believe that he is probably right that for the cardiac cases the addition of carbon dioxide to the oxygen is not called for. But for pneumonia I believe a certain amount of carbon dioxide is beneficial; how much, is still uncertain. We hope that Dr. Barach's experience will contribute largely to deciding this question.

On the question of how strong the oxygen should be, my opinion is that it should be strong enough to overcome cyanosis. No one should ever be allowed for any time at all to be at all cyanotic.

I listened to Dr. Jackson's paper with the pleasure that comes from hearing a master of his subject. He is leading to the wider use of the technic that he has developed. And I rejoice to be associated with him in the general movement for the saving of lives from asphyxia. He has said truly that the death rattle is an indication of obstruction of the glottis and asphyxia. I can support and expand that statement, for in nearly all possible ways of dying the terminal state, when respiration and the circulation are failing, is one of asphyxia.

## GUARDING HEALTH IN SUMMER CAMPS

Health conditions in summer camps in the State are being carefully watched by the State Department of Health, and we are informed that an advisory committee has been appointed by the Department as an initial step toward securing better compliance with the provisions of the State Sanitary Code relating to summer camps for children and camp sanitation.

Approximately one-quarter of such camps are operating each year without the permit of local health authorities required by the Code, the Committee estimates. About 200,000 children are scheduled to attend camps in New York this summer. The protection of these children now represents a major health problem. The Committee decided to appoint a subcommittee to consider the drafting of legislation providing for the licensing of summer camps by the State Commissioner of Health, with the payment of a fee, and for the establishment of suitable machinery in the State Department of Health to maintain adequate sanitary supervision and advisory service to camp directors.

The operation of a summer camp without the required permit of the local health officer is a misdemeanor, but the Committee believes a large number of camp directors are inadvertently violating the Sanitary Code due to ignorance of its requirements. It was reported to the Committee that in some instances, although application has been made for camp permits, local health officers have failed to make the required inspections and issue the permits.

A large majority of directors of organized summer camps for children realize their responsibility for the health and safety of the children under their care and would welcome more effective health regulation and supervision, the Committee believes. It was agreed that the State Department of Health immediately circularize the directors of camps of which it has record, calling attention to the sanitary code requirements and stressing the importance of safe water and milk supplies, and that a communication be sent to health officers in the areas in which camps are likely to be located, urging prompt but careful inspections and investigations before the issuance of permits. The Committee indicated that it favored the use of pasteurized milk in summer camps whenever available.

## NEW RULING ON THE KISS PERIL

An epochal decision on a vexed question, or moot point, or whatever it may be, was made at the annual meeting of the California State Dental Association. It can be construed, if desired, as a repeal of the prohibition of osculation. "There are germs in every mouth," said Doctor Thomas B. Hartzell, chairman of the American Dental Association's research committee and former president of the association. "But," he added "you'll find the same germs in all mouths—the girls' as well as the boys'."

## CLINICAL EXPERIENCE WITH VITAMIN D MILKS

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In a recent investigation concerning the incidence of rickets among infants enrolled in various health stations in New York City, it was found that 50 to 60 per cent of them showed clinical evidence of this disorder during the winter months. Severe rickets were noted in 10 per cent of the white and 20 per cent of the colored infants. It is evident therefore, that the eradication of rickets is still a major health problem. This situation is all the more surprising when we consider that there are on the market a number of preparations which have specific antirachitic properties, as for examples, cod liver oil, viosterol, halbut liver oil, concentrated cod liver oil, etc. The disadvantages associated with the use of these antirachitic agents is that of necessity they require for their administration the cooperation of mothers. On questioning 100 mothers, in the health stations three years ago, regarding the use of antirachitic preparations, it was found that, although most of them were advised to use either cod liver oil or viosterol, a large proportion did not heed this advice. Some complained of the disagreeable odor of cod liver oil, some stated that the infants either refused or regurgitated the oil, while others objected to the expense of these preparations. In private practice the number of infants receiving antirachitic therapy is, of course, much higher, but from a communal point of view, a considerable number of infants are not receiving the benefit of vitamin D during the winter months.

Since milk is the universal food for infants, it is only logical that attempts should have been made to incorporate vitamin D into this basic food. The administration of vitamin D, through the medium of milk, would be automatic and would therefore not require the cooperation of mothers. The following methods have been employed to fortify milk with vitamin D: (1) irradiating milk by means of the carbon arc lamp, (2) feeding cows irradiated yeast or ergosterol, and (3) adding a vitamin D containing preparation to milk.

### IRRADIATED MILK

In 1925, Hess<sup>1</sup> reported that milk could be endowed with antirachitic properties as a result of exposure to ultra-violet radiations. Since then, irradiated milk has been used for the prevention and cure of rickets in many countries. Cowell,<sup>2</sup> of England, Scheer,<sup>3</sup> of Germany, Wieland,<sup>4</sup> of Switzerland, as well as Kranier,<sup>5</sup> of this country, have reported favorable results with the use of this milk. In the winter of 1931-1932, Hess and Lewis<sup>6</sup> carried out an extensive investigation concerning the prophylactic and curative value of milk which has been irradiated by means of the carbon arc lamp. This study comprised 102 infants, and the results may be summarized by the statement that none of the 88 infants receiving this milk for preventive purposes developed rickets as evidenced by roentgen examination and 14 infants who showed evidence of this disorder at the beginning of the study, manifested marked healing in the roentgenograms after having received 24 oz of irradiated milk for one month.

Biological assay of irradiated milk employed in the afore mentioned study revealed about 55 Steenbock units in one liter of milk. Repeated tests showed that the potency of the milk did not vary to any great extent. In view of the fact that most of the infants received 24 oz of milk, only 42 rat units were required to prevent or cure "roentgenologic" rickets as compared with 600 units which are necessary to accomplish the same result when viosterol is given, and approximately 160 units when cod liver oil is given. The ratio of effectiveness of irradiated milk to cod liver oil and viosterol in the infant from the standpoint of rat units is therefore about 15:4:1. A probable explanation for the discrepancy in behavior of antirachitics in the infant as compared with the rat will be given later on in the paper.

In regard to the minimum amount of irradiated milk which is sufficient to protect infants against rickets, our experiences of last year might be cited.

Sixteen ounces of irradiated milk were given to 6 rachitic infants, and after one month definite healing was noted in 5 instances. The infant which failed to respond favorably was colored and was suffering from a very advanced type of rickets. During the past winter 2 colored rachitic infants were given 12 oz. of irradiated milk daily in order to determine the antirachitic effect of this small amount of irradiated milk. In one infant healing was brought about after one month, whereas in the other infant no healing was observed during the same period of observation. The author is, therefore, of the opinion, that in most instances 16 oz. of irradiated milk would suffice to protect infants against rickets. The average artificially fed baby receives approximately 16 to 18 oz. of milk at three to four weeks of age, 20 to 22 oz. of milk at two months, and about 24 oz. at three months of age. Since rickets are rarely manifested in full-term infants under two months of age, even though they receive no antirachitic therapy, it is evident that infants who are given irradiated milk from the time they are born would adequately be protected against this nutritional disorder.

The irradiated milk which we used for our investigations had been exposed to the carbon arc lamp for a period of sixteen seconds. Recently it has been shown by Supplee that an exposure of sixteen seconds is unnecessarily long, inasmuch as the same degree of activation of milk can be brought about by an exposure of only two seconds. By means of the Rentschler meter it is now possible, according to Supplee, to have recorded in a simple manner the intensity of the ultra-violet radiations emitted from the carbon arc lamp. Consultation with these records will, he hopes, enable the health officer to determine whether the carbon arc lamp has been functioning properly.

In regard to the question of the possibility of toxic effects resulting from irradiated milk, it should be stated that no one has ever observed any untoward symptoms or hypercalcemia resulting from its administration. It seems that the low titre of rat units in irradiated milk would preclude such a possibility. Furthermore, feeding rats 10,000 times a therapeutic dose of irradiated milk for a period of months did not bring about any deleterious effects, or any abnormal histological changes in the tissue.

#### VITAMIN D MILK OBTAINED FROM COWS FED IRRADIATED YEAST OR IRRADIATED ERGOSTEROL

Three years ago, Thomas and Macleod<sup>7</sup> reported that the antirachitic potency of milk can be augmented by feeding cows irradiated yeast or irradiated ergosterol, and at about the same time Hess<sup>8</sup> and his coworkers described their clinical experiences with milk produced in this manner. Their study was carried out in two infant welfare stations in New York City, and the procedure was similar to that employed in the investigation of the clinical value of irradiated pasteurized milk. One hundred infants were divided into four groups: The first group received milk from cows fed 30,000 units of irradiated yeast, the second, milk from cows fed 60,000 units of irradiated yeast, the third, milk from cows fed 100,000 units of ergosterol, and the fourth, milk from cows fed 200,000 units of irradiated ergosterol. Biological assays of these milks revealed the presence of 80 rat units in a liter of milk which was obtained from the cows fed the lesser quantities of irradiated yeast and ergosterol, and 160 rat units in a liter of milk, which was obtained from cows fed the larger quantities of these antirachitic substances. It will be noted, therefore, that three times as many units in the form of irradiated ergosterol, as irradiated yeast were necessary to produce milk of similar biological titres.

The clinical results of this investigation showed that 24 ounces of milk containing 160 rat units of vitamin D per liter prevented or cured "roentgenologic rickets" whereas a similar amount of milk containing 80 units per liter failed in some instances to prevent or cure this nutritional disorder. In a survey last year, concerning the appraisal of various antirachitic agents from the standpoint of rat units, Hess and Lewis<sup>9</sup> deduced that 24 oz. of "yeast" milk containing 100 units per liter should protect against or cure "roentgenologic rickets" which is an expression of the moderate and severe forms of rickets. Mild cases of clinical rickets as evidenced by beading of the ribs and craniotabes, developed in a number of instances, but they emphasized the fact that in their experience, no antirachitic agent can be relied upon to prevent the development of mild clinical rickets. As far as we know, there are no deleterious effects resulting from mild rickets, and

the goal of those interested in the eradication of this disorder, should be concerned with the prevention of the moderate and severe types since the latter are frequently responsible for contracted pelvis and marked deformities of the chest.

For the past two or three years, milk from cows fed 60,000 units of irradiated yeast has been used commercially in New York, Boston, and Philadelphia, as well as in other large cities. As stated previously, there are at present 160 rat units in the liter of milk produced in this manner, although 100 units per liter would be sufficient. It would seem that the production of so-called "yeast milk" should be limited to the larger certified dairies which can be relied upon to supply the requisite amounts of irradiated yeast to the rations of the cows. Assays of the milk should be made from time to time by reliable laboratories and should be checked by local health authorities.

#### COD LIVER OIL VITAMIN D CONCENTRATE ADDED TO MILK

Clinical investigation of the antirachitic value of milk to which a cod liver oil vitamin D concentrate was added has been carried out by Barnes, of Detroit, and the results have been reported briefly by Zucker.<sup>10</sup> Fifteen rachitic infants were given milk containing from 100 to 150 units of cod liver oil concentrate. Favorable results were noted as judged by a return toward normal of the calcium and phosphorus content of the blood and cases of complete healing as judged by x-ray were recorded in about forty days.

#### CRYSTALLINE VITAMIN D INCORPORATED IN MILK

During the past winter the author in collaboration with the late Dr Alfred F. Hess investigated the antirachitic value of milk containing crystalline vitamin D. This substance has been isolated from irradiated ergosterol by Windaus in crystalline form and has marked antirachitic properties. For example, one milligram is equivalent in potency to approximately 13,000 Steenbock rat units.

A group of 8 infants was given 24 oz of milk containing 42 units of crystalline vitamin D, another group of 9 infants was given 24 oz of milk containing 80 units of crystalline vitamin D. A third group comprising 9 infants was given 80 units of crystalline vitamin D in corn oil, in order

to determine whether vitamin D administered in milk is more effective than when administered in oil. No attempt is made to give the details of this investigation which will be reported at a future date, but the results are summarized by stating that in every instance in which 80 units of crystalline vitamin D were given in the medium of milk definite healing was noted on the roentgenograms after four weeks, whereas only 3 of the 9 rachitic infants receiving 80 units of crystalline vitamin D in oil showed healing during the same period of observation. Of the 8 infants receiving 42 units of crystalline vitamin D in milk, healing was observed one month later in 6 instances. The results of this investigation indicate that the medium of milk allows for better absorption or utilization of vitamin D than does corn oil and offers an explanation why vitamin D milks as a group require fewer units than viosterol or cod liver oil to prevent or cure infantile rickets.

It is evident that vitamin D milks irrespective of the manner in which they are produced are capable, not only of preventing but also of curing rickets. If all artificially fed infants were given vitamin D milk, rickets would indeed become a rare disorder. It should be mentioned, however, that occasionally infants will develop rickets in spite of receiving a liberal supply of vitamin D. These cases may be resistant to treatment, even with excessively large amounts of vitamin D, and should they be encountered in infants receiving vitamin D milk, it should not be deduced from such an experience that the milk has been a failure.

In order to determine the effect of the administration of irradiated milk to lactating mothers on the course of rickets in breast fed infants 3 nursing mothers whose babies were suffering from rickets were given one quart of irradiated milk. At the end of one month, roentgenograms were taken of the wrists and in no instance was healing noted. From this experience involving only 3 cases it is obvious that the administration of irradiated milk to lactating mothers cannot be relied upon to augment appreciably the vitamin D content of their breast milk. In a recent report Bunker, Harris, and Eustice<sup>11</sup> showed that 24 oz of yeast milk given daily for a period of two weeks to nursing mothers brought about an increase of the vitamin D content of breast milk so that one quart con-

tained approximately 8 rat units, a potency inadequate to prevent or cure rickets in nursing infants. Antirachitic agents will have to be given directly to nursing infants in order to protect them against rickets.

Clinical investigations concerning the value of vitamin D milks have been limited almost entirely to rickets. In some reports, however, mention has been made of the effectiveness of these milks in the prevention and treatment of infantile tetany, which is almost always a complication of rickets.

Vitamin D milks should prove of great value in the prevention of osteomalacia (adult rickets), a disorder endemic in some parts of China and India. According to Macy,<sup>12</sup> the addition of vitamin D to the diet of lactating and pregnant mothers brings about an improvement in the calcium and phosphorus retention so that vitamin D milk might be prescribed with advantage to pregnant and lactating mothers. Mellanby and Hess among others, are of the opinion that the lack of vitamin D is an important factor in the development of dental caries. Vitamin D milk might, therefore, have some application in the prevention of this disorder, although as yet no clinical studies have been reported of its use in this connection.

Vitamin D milk might be given with advantage from infancy to adolescence in order to bring about an optimal phosphorus and calcium retention during the growing period. Whether it should be given to adults is a moot question.

#### SUMMARY

A discussion of the antirachitic value of

various types of vitamin D milk has been given.

Vitamin D milks are very effective antirachitic agents and require fewer units to prevent or cure rickets than are necessary in the form of cod liver oil or viosterol.

Eighty units of crystalline vitamin D incorporated in milk brought about definite healing in all of 9 rachitic infants in one month, whereas 80 units dissolved in oil brought about healing in only 3 of 9 rachitic infants during the same period of observation. These results indicate that the medium of milk allows for better absorption or utilization of the antirachitic vitamin and offer an explanation why vitamin D milks as a group require fewer units than cod liver oil or viosterol to prevent or cure infantile rickets.

The administration of vitamin D milks to lactating mothers cannot be relied upon to prevent rickets in breast-fed infants. Antirachitic agents will have to be given directly to nursing infants in order to protect them against this nutritional disorder.

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#### THIS AND THAT

A special room has been provided in a school at Monrovia, California, for pupils who need special health training. There they will have in addition to their regular school program orange juice, sunbaths when the weather permits, a hot lunch prepared by an expert dietitian and a rest period for an hour during the afternoon.

Each child's individual needs will be studied and the school will work closely with the child's home to bring all these substandard children up to normal health.

A drug traffic in Europe has been largely brought under control and the illegal manufacture of drugs has been almost destroyed, according to a report of the Director of the Control Narcotics Intelligence Bureau. But it seems that a fresh danger has arisen in the Far East, where in Manchuria a new field of drug traffic is being opened up, which may in time become

a menace to the world. What appears to be a government opium monopoly is functioning in Manchuria, and this encourages the growth of the local product and the import of Persian opium. Bulgaria is now almost the only European country manufacturing morphine and cocaine, deliberately designed for illicit traffic. The survival of the manufacture in spite of the ostensible willingness of the Bulgarian government to suppress it seems to be due to the occult influence of various Macedonian organizations.

New Jersey doctors have obtained state legislation providing that charges for medical services shall be a lien on awards for injury or illness.

An Oklahoma publication says that the American physician is "the pier of any in the world." Is that why he is called "doc?"



## THE WORK OF THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION

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Fifty years ago, Wm. Mitchell brought to the attention of the medical profession the importance of physical therapy. The indifference with which the profession received his message and its disregard of the field of physical therapy has been largely responsible for the growth of a series of cults whose practices center around fragments of this form of therapy. Due to the successful use of physical therapy in caring for injuries in the World War, there was a large production of complicated machines and apparatus utilizing simple physical agents in the treatment of many diseases and disabilities. The manufacturers spent large sums of money advertising these machines and none advertised the simple, cheap, and easily obtainable physical agents, of heat, massage, water, and exercise. In the minds of most physicians, therefore, the term physical therapy soon evoked a picture of an office filled with complicated electrical apparatus and an assortment of lamps. The medical profession as a whole had no courses in physical therapy in its medical curricula. Most physicians had no access to authentic information of the value of these machines and were obliged to receive their knowledge through inspired literature in second rate medical journals, by courses given by manufacturers of instruments, and through demonstrations by salesmen. This sale of machines was not limited to the medical profession, but machines were often sold to beauty parlors, clubs, and to various cults. Not satisfied with this success, manufacturers advertised and sold their machines directly to the public. Undoubtedly, every member of the medical profession is familiar with the false, exaggerated, and unwarranted therapeutic claims made for the use of ultraviolet lamps sold to the public.

Observing this deplorable condition, Dr. Joseph F. Smith, of Wisconsin, in 1925 submitted a resolution to the House of Delegates of the American Medical Association setting forth the apparent need for the creation of some official body that might attempt to bring about a rationalization of

physical therapy. The resolution was adopted, and the Council on Physical Therapy was organized in September, 1925.

The aims of the Council are: (1) to protect the profession and the public from misleading and deceptive advertising in connection with the manufacture and sale of physical therapy devices, (2) to disseminate such reliable information as the Council may possess or acquire in the use of physical therapy, (3) to stimulate instruction designed to aid the practicing physician in the choice and application of sound methods of physical therapy, (4) to act in an advisory capacity to the profession and the public in matters pertaining to this particular field of therapy.

How are these aims accomplished? To protect the profession and the public from misleading and deceptive advertising in connection with the manufacture and sale of physical therapy devices it has been necessary to devote much of the time of the Council to the consideration of physical therapy apparatus, including that which has been submitted by manufacturers with a view of securing the Council's acceptance, and that which is offered for sale without submission. The list of accepted and rejected apparatus is proof of the earnest effort that has been made to properly evaluate the evidence that has been submitted to the Council, to safeguard the interests of reputable manufacturers and to protect the medical profession and the public.

In ultra violet radiation therapy some of the important results of the Council's investigations have been incorporated into its revised "Regulations to Govern Advertising of Ultra-violet Generators to the Profession." The cooperation of the Council on Dental Therapeutics of the American Dental Association was secured to determine the value of ultra-violet radiation in dentistry. The Council has cooperated with the International Congress on Light by sending a representative to its last meeting, and by adopting its suggested standard unit of dosage for ultra-violet

radiation, that is, 20 microwatts per square centimeter of homogeneous radiation of wavelength 2967A as the erythral unit (E.U.).

The investigation of high frequency electrical machines has required much time and effort of the Council. The Council cannot afford to accept an electrical apparatus until it has been thoroughly tested as to its insulation, safety, and efficiency. A saner interpretation of the value of high frequency electrical currents to the general practitioner was made by the publication of Council-adopted articles on "Medical Diathermy," "A Preliminary Statement to Acceptance of Diathermy Apparatus," and "The Examination of Diathermy Machines for Local Diathermy Treatments and Requirements for Acceptance of These Machines by the Council on Physical Therapy of the American Medical Association."

The Council has published a critical article on Oxygen Therapy and has investigated resuscitation equipment and oxygen tents.

The Council has on file lists of accepted apparatus. It can now be stated that the medical profession and hospitals should buy only high frequency electrical machines and ultra-violet lamps that have been accepted by the Council, as these are the only machines that have been thoroughly examined for safety and efficiency by a disinterested group. There are a large number of devices that might be regarded as coming within the purview of the Council. However, to facilitate the work of the Council, two lists of devices have been formulated: one a list of apparatus that the Council will consider and report on as soon as possible, and the other a list of articles that cannot be given immediate consideration.

The second aim of the Council is to disseminate such reliable information as it may possess or acquire on the use of physical therapy. The most important step in this aim was the publication of the Handbook of Physical Therapy, in which many valuable and authoritative articles previously published in the *Journal of the American Medical Association* were brought together. The third printing of the first edition of this book is nearly exhausted and the second edition will be ready for publication by the end of this year.

At various intervals the Council con-

tinues to publish in the *Journal* articles on the use of physical therapy. To aid the medical profession in the accumulation of acceptable evidence on the value of physical agents in the treatment of disease or injuries the Council adopted and published the article "Evaluation of Methods Used in Physical Therapy." This article deals with the kind of evidence that is acceptable to the Council relative to its consideration of apparatus and for the evaluation of treatment methods used in physical therapy.

To stimulate research, each year the Council awards small grants to critical investigators for purchasing needed materials for their work. The results obtained with these grants have been encouraging.

The third aim of the Council is to stimulate instruction designed to aid the practicing physician in the choice and application of sound methods in physical therapy. This must start in premedical education. Early the Council realized this and published an article on this subject in 1926.

The Council has published articles on "Medical Education" in 1930 and 1931 and will soon publish another on "The Teaching of Physical Therapy to Undergraduate Medical Students."

While the education of the medical student is important, it is clear that there remains a field within the medical profession that is not reached by the schools. This field is the extension to practitioners at large information more or less practical on the use of physical therapy. A few institutions give postgraduate work in physical therapy, but the total number of physicians who can afford the time for such an enterprise is relatively limited. There is no question of the desirability of extending to the profession as a whole, especially in those regions not in touch with the teaching centers of medicine, a working knowledge of the general principles underlying physical therapy. In order to do this, the Council is planning to follow the pioneer work of your State Society in creating a physical therapy committee. Recognizing the value of Dr. Richard Kovacs' work in this plan, the Council recently adopted and published an article by him on "Physical Therapy Committees in State and County Medical Societies." It is the hope of the Council that these committees will hold seminars for the postgraduate instruction in physical therapy for the practicing physician.

Another method of promoting sound education in physical therapy is the exhibition and demonstration of physical therapy at the annual session of the American Medical Association. These exhibits have been loaned to several state and other scientific medical societies.

In the education of physical and occupational therapy technicians, our Council has secured the cooperation of the Council on Medical Education in the formulation of the essentials for schools for these technicians. By next year this Council will probably publish lists of approved schools for physical and occupational therapy technicians.

The final aim of the Council is to act

in an advisory capacity to the profession and the public in matters pertaining to physical therapy. This is done largely through correspondence and the success of this effort is demonstrated by the gradual increase of correspondence of the Council.

The Council has been in existence over eight years. It is believed that the Council has played an important part in the progress that physical therapy has made during this period. It was created by the medical profession for the medical profession and needs your cooperation. Only with your cooperation and understanding of the problems of the Council will it be able to help physical therapy to reach the position in the art of healing which it deserves.

### ONE DOCTOR'S PLAN—IT WORKED, TOO

Any plan for collecting fees that works is well worth noting just now. In this case the collecting is done by an odd looking Indian basket as the story goes in *Medical Economics*. The doctor, it seems, had two offices, one at his home in the industrial part of town where the people were small wage earners and the other downtown patronized by the well to do. With hard times the wage earners failed to pay and the doctor soon found himself in shallow water financially. What to do? His eye fell on the old Indian basket, which he had used for a catch all. He put it in a prominent location on his desk, and suggested that each patient drop a dollar bill in it as he left. The first day the patients put in \$9, and not one of them had paid a cent before for months. The doctor adds: "This odd looking basket has never ceased to function since that time. Factory people do a good deal of gossiping. This fact, supplemented by my daily talks with patients, established the dollar payment habit in the beginning and has kept it functioning ever since."

To my patients the plan looked good as it enabled them to maintain their self respect and to keep square. At the same time discharge all my time a patient car money instead of.

We are assured that this doctor has a beautiful home and two modern offices, is a director in a leading bank, has educated three daughters and a son in leading American universities and spends a month each year hunting and fishing in the north woods.

On the basis of a successful practice in the factory district of his city his reputation has spread throughout the community in which he lives, so that he now has hundreds of patients who pay him standard fees. Both within and without the profession he is highly respected and he still maintains the institution of the dollar basket for his factory patients.

### A NEW ALLY AGAINST MEDICAL PEONAGE

An ally in the fight against compulsory state medicine appears in the Christian Science camp. This faith may perhaps deny the value of scientific medicine but it recognizes the rights of the individual and sees peril in any system that would force the physicians and the public into a mechanized regimentation of healing. The editor of the *Christian Science Monitor* asks if those who do not feel the need of medicine sufficiently to seek its aid—even when offered free in countless clinics—will "permit themselves to be saddled with medical peonage under a compulsory plan. He makes this engaging summary of the situation. The family physician who brought kindness, ready sympathy, and unselfish service in large quantities along with his pills and potions has been passing from the American scene, more and more his place has been taken by a complex mechanism, a highly departmentalized professionalism, with impersonal efficiency of

its dominating sentiment. Now there is a tentative plea for a broad organization of state medicine as recently outlined by the secretary of the Milbank Memorial Fund of New York. This plan utterly impersonal, purposes that the entire American population—including that 62 per cent which the fund's spokesman says receive no medical, dental, or eye care of any kind—shall be coerced into supporting financially and yielding physically to the domination of a group of state employed medical men.

"It is difficult to understand why every citizen—including those who by choice would adhere to a rival school, to no school, or those who depend upon prayer for healing—should be compelled to comply with such a regulation. Incidentally, it is strangely foreign to the legend of the family doctor who worked under the motto 'To each according to his need, from each according to his means.'"

## EARLY DIAGNOSIS OF CARCINOMA OF THE CERVIX

NATHAN P. SEARS, M.D.

*Syracuse*

Since as yet no specific cure for cancer has been discovered the results obtained in treatment of this disease depend for their success upon early diagnosis. There is no organ in the body which is better adapted to the study of cancer than the cervix uteri. It presents symptoms which are externally visible, it is easily accessible for examination and biopsy, and when removed by surgery or treated by radiation leaves no visible scar, no loss of vital function. The grading, according to extent, as presented by the League of Nations Cancer Committee has given common terms by which the results of various clinics can be compared. Although not entirely free from the personal equation it is far more accurate than the classification according to "operable" and "inoperable" which varied according to the boldness and optimism of the attending surgeon. The marked difference in "curability" between Stage I and Stage III or IV cancer is sufficient to stimulate the most pessimistic to increase his vigilance in the battle for early diagnosis. If cancer of the cervix is to be controlled, and this means that diagnosis must be made early, there must be complete cooperation between physician, patient, and pathologist. Each must share in the responsibility, and upon the physician and the pathologist must fall the greatest burden.

The medical profession must be prepared not only to recognize early cancer but also to bear the burden of educating the prospective patient. It should be the duty of every medical school in the country to indelibly imprint upon the mind of each graduate the methods of detecting early cancer, that *early* cancer only can be controlled, and that it is his duty to teach the public the facts about such lesions. It should not be possible, as is frequently the case, for patients to report abnormal bleeding to their physician and then be allowed to go for from six months to a year without a diagnosis. Within the last year the author has had the misfortune to see 3 such cases, each presenting herself with a Stage III or IV cancer of the cervix.

Every woman should be taught by every available means that irregular bleed-

ing or unusual discharge may be a sign of early cancer and that early cancer has a favorable prognosis. Within a month one of the author's patients whose sister has cancer of the cervix quoted her doctor as saying; "No cancer ever gets well. If the patient has a cancer, she dies; if she doesn't die she didn't have cancer." This doctor is an elderly man whose word has great weight in his community. What hope have we of fighting this disease when patients are given such instruction? Each woman should be taught that abnormal bleeding is not a normal accompaniment of the menopause. She should be taught to present herself early to a competent physician and that from him she can expect a thorough examination and careful advice and not the often careless reply that she will be all right as soon as her "change" has passed. She must be taught that if she does not get careful consideration, she must seek advice elsewhere. Of these things the most important is that she must be taught that early uterine cancer has a good prognosis, otherwise she will dread, fear, and postpone the examination that would possibly disclose an early lesion.

Physicians, either specialists or practitioners, must understand that cancer has no definite symptoms. Bleeding and discharge are symptoms presented by cancer as well as many another condition, and it is our duty immediately to determine by careful examination the nature of the lesion. The question is not, what are the possible causes of bleeding, but, is the bleeding due to a benign or malignant lesion? The idea that cancer is always associated with a profuse, foul, watery, blood-tinged discharge should be abandoned. To-day the symptom that most quickly arouses the author's suspicion is a slight spotting of blood, often, but not always, exaggerated by trauma, either intercourse or douching. There may also have been a recent vaginal discharge or a change in character of a preexisting one. Let me emphasize again that, although these symptoms may be due to a benign condition, this cannot be assumed from the history.

Since, therefore, it is evident that early cancer has no distinctive symptoms, its

diagnosis depends upon examination. Palpation is of little value in the early lesion. When one feels a hard fixed cervix, a cauliflower mass, or a crater-like ulcer, this lesion is no longer early cancer. Digital examination in the early lesion frequently shows no more than the blood-stained glove finger. Visual examination through a well-fitted speculum and using a good light should be demanded by every woman who is suspected of having any lesion of the cervix. Examination while bleeding, except during normal menstruation or threatened abortion, is not contraindicated, and this point should be strongly emphasized. It is at the time of the bleeding that one can frequently determine its cause.

Early cancer may appear as a small, elevated nodule only 2 or 3 mm in diameter, as a slight papillary growth, or as a shallow ulcerated area. Each of these lesions has one characteristic, it usually bleeds freely when touched with a smooth object. Early lesions are apt to appear at the junction of the squamous and columnar epithelium at the external os. More advanced lesions appear as larger and more distinct masses showing signs of necrosis. They have an opaque granular appearance and crumble and bleed when pressed against. On the contrary, inflammatory lesions are more resilient, glistening, and although they may bleed, they are quite different in appearance. This difference, however, may be apparent only to the experienced gynecologist.

Recently Schiller has presented a test which bids fair to help not a little in locating suspicious lesions. This test is based upon the brown staining of cell glycogen by iodine and is carried out as follows: Lugol's solution\* is poured into the vagina through a speculum and then held against the cervix for two minutes by means of a tampon. After removing the tampon, the normal cervix is seen to be stained a mahogany brown while abnormal lesions such as early cancer, leukoplakia, or erosion show no staining. This may often direct our attention to the suspicious area.

Biopsy is, in early cancer, the final word. There have been some who fear this procedure thinking that dissemination of cancer will follow. However, it seems to most gynecologists that the value of tissue

study far offsets any theoretical danger of spreading the disease. There are, however, a few warnings. Promiscuous biopsy on definitely benign cervixes is unnecessary, biopsy in sloughing advanced cancer is unnecessary, and as these are so frequently infected with virulent streptococci there may be danger of general infection. Biopsy of early lesions can be carried out in the office with a rongeur or with scissors. The edges of the wound should be immediately cauterized with the actual cautery. If a small electrosurgical knife is used care should be taken not to damage the tissue to be examined. Tissue removed should be put in 10 per cent formalin, properly labeled and sent to the laboratory. The sending of the tissue to two or more laboratories should be condemned. This often leads to confusion since one laboratory may receive a piece of malignant tissue and another benign tissue. This practice is also not without danger for if the pathologist in whom the physician has the most confidence receives the benign tissue, the patient may not receive the proper treatment. All laboratories should use all the tissue removed from suspected cancer and make many slides, any of which could be sent for consultation.

Frozen section, except in laboratories where the pathologist is thoroughly familiar with this technic, should not be used for the diagnosis of these early lesions in which detail study of the cell is necessary. Permanent celloidin or paraffin sections can be made in any laboratory in 24 hours if necessary.

Occasionally a patient appears, giving a history of irregular bleeding, and a most careful search fails to reveal any lesion. In such cases we must suspect cancer above the external os. Such a lesion may be located by gently passing a smooth instrument into the cervical canal, this procedure will cause a small stream of blood to appear. This at least tells one where to obtain the material for examination and in this case curettage is most helpful.

Let us not forget that incipient cancer of the cervix may exist together with some more evident lesion. For example, an easily demonstrable fibroid may be accepted as the cause of bleeding when a more critical examination would reveal an early cancer. The author believes that every woman presenting any bleeding suspicious of cancer should have a careful study for malignancy no matter what other condition

\* Lugol's      Iod gm 1, Pot Iod gm 2 distilled water  
300 cc

is present. If this were done more often, there would be fewer instances of cervical cancer discovered after supravaginal hysterectomy.

Although no cause of cancer is known, there is considerable indication that chronic inflammation is at least an important factor in the development of cervical carcinoma. The high percentage of cases developing in lacerated and infected lesions of the cervix has been common knowledge for many years. Many pathologists have called attention to the apparent similarity between the reaction of healing and of early cancer. Overholser and Allen have been able to produce in the cervix of the monkey, by the administration of ovarian hormone together with traumatization of the cervix, lesions indistinguishable histologically from cancer. Because of the possible relationship between chronic irritation of the cervix and malignancy, all chronic lesions should be eliminated, usually by means of the cautery, in the hope of preventing the development of carcinoma.

In the healing of cervical erosions, ectropion, and similar conditions, squamous epithelium may grow along the healing surface to be covered by the columnar epithelium and glands, giving the appearance of invasion. At times, probably due to metaplasia, the columnar epithelium lining the glands may be replaced by squamous epithelium giving the appearance of deep strands of invading cells.

Schiller, in a recent article speaking of the appearance of the border of advancing carcinoma, makes the following statement: "If the carcinomatous area bordering the carcinoma is recognized as carcinoma, and we are logically bound to accept this assumption as true, then from our study of the uninterrupted series the smallest carcinomatous layers with no down growth

must be considered as carcinoma as well." If we can accept Schiller's statement, and I, personally, believe we can, it becomes the duty of the pathologist to differentiate benign and malignant lesions by cell study alone. In other words, is not the cell of a carcinoma which has not yet invaded normal tissue just as malignant as the one already past its normal boundary? Is a rabid dog any the less rabid because he has not yet broken loose from the barrier surrounding him? In nonmalignant lesions, even though there is apparent invasion, the cells maintain their normal morphology and arrangement, while in the malignant state they show loss of polarity, variation in size and staining intensity of the nuclei, and numerous mitotic figures. In some instances, however, the line between malignant and benign reaction is so obscure that an unqualified opinion cannot be given. In such cases experience and sound judgment must direct the course to be followed.

In conclusion, it should be stated that it is the duty of every member of the medical profession to keep constantly in mind the following: First, early cancer has an excellent chance of being completely arrested in its growth and late cancer is hopeless. Second, early cancer can only be diagnosed by careful cooperation between patient, physician, and pathologist. Third, we must teach the women that early cancer is controllable so that they will not dread and postpone examination. Fourth, when they appear, they are entitled to a complete and careful examination. Fifth, all chronic lesions of the cervix should be intelligently treated in the hope of preventing cancer. Sixth, biopsy is simply and harmless if properly done and should be carried out whenever an area suspicious of cancer is found on or in the cervix.

#### BABIES AND OTHER THINGS

In 1900, 170 out of each 1000 babies born alive died during the first year. In 1932 the figure had fallen to 58. In other words, out of every 1000 babies born in 1932, 112 were spared the ~~case~~, they would have suffered in 1900. A bleeding to 1920 stood about 7 chances out of allowed to go a prey to diphtheria. The risk year without a in 1930 was about one-third as

see 3 such cases ~~ng~~ fondness for babies. The with a Stage III or strong. The doll is their

Every woman ~~Sic~~ doctor in Pennsylvania every available means 5, had hitherto been an

obedient child. One night, however, she absolutely refused to say her prayers. Mother reasoned with her and then came the explanation: "I have been saying my prayers every night for six months praying for a baby sister, and none came; Madeline across the way does not say her prayers at all and last night her mother had twins."

The case against socialized medicine was put in a neat nutshell by Dr. W. A. Mulhern, Professor of Pediatrics at the University of Georgia, in an address before the Tennessee Medical Association. "When politics enters the profession," he said, "efficiency goes out the window."

## THE MODERN PSYCHIATRIC HOSPITAL IN RELATION TO PUBLIC HEALTH

W W WRIGHT, M D

Marcy

In spite of all that has been written in recent years in regard to mental disorders and in spite of all the lectures that have been given and all the public clinics that have been held, the general public has still but a vague and a distorted notion of the problem.

A few centuries ago the field of grave mental disorder belonged to the field of demonology. The insane, it was believed, were possessed of devils which had to be expelled from the body of their possessor by castigation and exorcism. Many of these demons were known and were called by name as they left the body of the host. Devils were the producers of evil and sin, and the possessors thereof, being sinful or accursed, were made outcasts.

The belief that the mentally ill are possessed of devils has faded but the curse remains. Even to day mental disease is often regarded by the family as something to be ashamed of, a topic to be avoided or spoken of in whispers. As a result of this feeling about mental disorders a state hospital is regarded as a place to be ashamed of. It is often indicated by the pointing of the thumb, its name is not spoken but it is designated by the term "over there."

The main concept of a state hospital is, that it is a form of prison, for the first things that the casual visitor asks to see are the padded cell and the dungeon. Such queries though come not alone from the laity but from the medical profession as well. It was with the idea of helping to correct some of these misconceptions and some of the misconceptions in regard to the causes of mental disorders that the present topic was chosen.

Probably one of the greatest handicaps to the general practitioner in his effort to treat mental disease is his belief that it is hereditary. Such a concept naturally leads to a feeling of hopelessness and a desire to be rid of the patient.

As proof of the correctness of the theory of heredity the Mendelian law is quoted. Mental disease, it is said, is a unit character.

In presenting this argument the fact is overlooked that there are forty six groups

and subgroups under which mental disorders are classified and that each of these groups has in most instances, an etiology different from the others. Also, the fact is overlooked that there are all gradations of mental aberration from a frank psychosis, on the one hand, to a slight deviation from the normal, on the other.

On first thought, one has a feeling of discouragement at the lack of apparent accomplishment in the prevention of mental disorders. On second thought, one is impressed by the vastness of the field and the necessity for prolonged and persistent effort in order that satisfactory results may be obtained.

In regard to the plans for disseminating knowledge of the problems of mental disorders much has already been written. Various methods of approach to the subject have been stressed, namely, adequate teaching of the subject in the medical schools, the importance of giving special courses to public health nurses, of extending clinic facilities for both adults and children, the need of psychiatric examinations and treatment of problem children in the schools, and the importance of visits to the state hospitals by service clubs, legislators and other public officials. But more work yet remains to be done.

Much may be accomplished if all state hospitals will give at regular intervals clinics and demonstrations to health officers at conferences arranged for their benefit. Such conferences eventually should be extended to include the general practitioners. Both groups, it is felt, will naturally welcome such conferences when they discover that a knowledge of mental disorders will benefit them in their work. In addition they should be encouraged to consult the hospital physicians, either at the hospitals or at the clinics, about the mental abnormalities of their patients.

The plans thus far outlined deal largely with extramural activities. The intramural activities of a psychiatric hospital as related to the treatment and rehabilitation of patients remains yet to be considered.

The term psychiatric hospital is used for the purposes of including the licensed

private institutions for the care and treatment of mental disorders. Many of these institutions, in addition to the excellent hospital facilities which they offer, render meritorious public service through the medium of their well-trained medical officers. But since the problem of caring for the mentally ill belongs primarily to the state, the rôle of the state hospital as a psychiatric hospital will be given most consideration.

To a group of well-trained psychiatrists it seems almost trite to enumerate the causes and the conditions which lead to mental illness.

Of the fact that the problems of life are year by year becoming more complicated and that, as a result, greater and greater demands are made on the individual to solve these problems, everyone is well aware. Every physician, also, is conversant with the fact that many of these problems the individual is unable to solve alone. Whether the problem can, with the physician's aid, be solved at the home or the clinic or whether prolonged hospitalization will be necessary, is a fine distinction which private physicians are often required to make. If the patient is admitted to a state hospital, then the responsibility for his care is transferred to the state.

On admission the idea of the patient, and often that of his relatives, is that he is in custody, virtually a prisoner. To correct this idea, therefore, is of utmost importance but to do this, a hospital atmosphere must be created and maintained in every department of the institution and among all the employees. However, such an atmosphere should be real and not artificial. Hence, when the patient is admitted, he should be regarded as a medical problem and every effort should be made to discover the presence or the absence of physical illness or glandular dysfunction so that when the examinations are completed appropriate treatment may be instituted.

To make such examinations and to give such treatments as are required, the standard equipment used by general hospitals for the diagnosis and the treatment of both medical and surgical conditions is necessary. To aid in carrying out these procedures the services of the visiting and the consulting staff of the hospital are needed, and practically all of the New York State hospitals, the author is pleased to say, have the advantage of the service of the various specialists in their respective localities. It

is also necessary to have a laboratory which is under the direction of a competent pathologist and which is thoroughly equipped to do clinical and pathological work.

When the bodily organs and the bodily fluids have been examined, it is often recorded that no definite physical ailment has been found, so it is evidence that forms of examination and of treatment not common to general hospital practice are required. To complete the examination, therefore, the mental life of the patient must be investigated. His assets, his liabilities and his experiences, together with his physical state, must be considered and evaluated in the light of his mental state. When the analysis of his condition has been completed and certain forms of psychotherapy have been prescribed, it is often found that in addition special forms of treatment are indicated, such as hydrotherapy, physical therapy, occupational therapy, physical training, and special muscle training.

During the course of treatment it is often necessary to transfer the patient from one service to another, hence it is important that all the data relating to the diagnosis and the treatment of the patient accompany him.

By the time the patient reaches the hospital he is often dissociated and self-centered. He lives in a world of his own creation and has little interest in his associates, hence means must be found to arouse his interest. This is accomplished largely through occupational therapy and physical training. By means of drills, games, and coordinated exercises the individual becomes less self-centered and more interested in his environment. His activities become constructive and purposeful and he develops the spirit of competition. Music also is effective in some instances.

Occupational therapy and physical training are applied usually to selected groups and in designated centers. These forms of treatment are excellent, but often as thus applied they reach only a limited number of patients. It is important, therefore, that these activities be extended so that all the patients in the hospital for whom these forms of treatment are prescribed may be benefited thereby.

To accomplish these purposes it is necessary to have the physical instructors visit the wards at frequent intervals and teach simple drills and exercises to those patients



that are not otherwise provided for. It is also necessary that the ward employees be given the same form of instruction that the patients have received so that they may be able to continue the work on the ward regularly each day.

The results of these forms of rehabilitation are usually slow of accomplishment and require painstaking effort over a considerable period of time, but as one reviews the progress that has been made the conclusion is that they are worth while procedures. Occupational therapy, physical therapy, and similar forms of therapy already mentioned are, however, not alone sufficient. They must be accompanied by psychotherapy. As soon as the patient can be induced to discuss his problems then every effort should be made to help him solve these problems. Naturally the earlier and the more thoroughly these therapeutic measures are applied, the better the results will be.

The importance of the social service department in spanning the gap between the hospital and the community is too well and too favorably known to need much comment. One of its functions is to bring many of the facilities of the hospital to the home and to the community in general. Through its efforts contacts are made with other social agencies which would not be possible otherwise. By means of it there is an interchange of ideas between the community and the hospital which are mutually beneficial.

In brief, then, it may be said that each state or psychiatric hospital should be the center for psychiatric advice, teaching, and treatment in its particular district.

**DR. H. H. STECKEL:** For more than ten years I have been particularly interested in the extramural educational program of several of our state hospitals and although I realize that much work has been done along these lines as has been suggested by Dr. Wright, yet there is still room for improving this very necessary educational program. It is my belief that we shall notice during the course of the next decade a very decided change in the attitude of medical schools with relation to their educational program along psychiatric lines. Two years ago the National Committee on Mental Hygiene sponsored a survey of psychiatric education in medical schools of this country and as a result of their report as well as suggestions made by them, it would seem to me we shall soon see a different attitude on the part of the medical profession toward mental disorder as the younger, newly-graduated physicians filter into the field.

I think there has been for several years a tendency toward a changing attitude with refer-

ence to medical education generally with special emphasis being placed upon the psycho-biological factors therein. New laboratory procedures, mechanical devices designed to improve diagnostic technic, such as the x-ray, cardiograph, et cetera, have tended, it seems to me, to mechanize medical procedure. It is coming to be more and more recognized that man consists not only of a group of organs which are quite highly synchronized, but that he has as well an emotional being which reacts to environmental settings in various ways—very often producing a disturbance of function in the organs already mentioned and thereby not infrequently leading in the long run to definite organic diseases.

During the past few years in the Syracuse Medical College an experiment has been carried on by means of seminars with senior students to emphasize to the student the need for a recognition of social and environmental factors,—not only in the production of diseased conditions but also to the need for the understanding of these environmental factors in rehabilitating the patient. This of course is nothing more than a psychiatric viewpoint or perhaps we might better say a psychobiological viewpoint which is being instilled into the young doctor's mind with no emphasis upon psychiatry, perhaps because of the natural resistance which has for a long time been evident against this specialty. We feel as a result of this experiment better physicians will be the order of the day and more hopeful results will be obtained not only in the field of preventive medicine but in the field of rehabilitation of patients after acute illnesses have subsided.

One cannot fully understand why there should have been for so many years an indifference on the part of the medical school toward this problem of mental disorder when we stop to consider the fact that there are in this country as many beds for mental disorders as there are in hospitals for all other diseases. On the whole, it seems to me, the attitude of the medical profession itself might very appreciably be improved. I presume the average medical man is so steeped in his interest in finding evidence of organic changes to explain symptoms on the part of his patients that he fails utterly to give weight to the emotional elements at play which, if we think, in terms of integrated individual, psychobiological approach to understanding of human behavior, undoubtedly play, an important part in the production of very definite organic disease and certainly most frequently in the production of so-called functional disorders.

I wish Dr. Wright had emphasized more forcibly our recent attitude regarding the relationship of heredity and mental disorder. Unfortunately, much damage has been done by the popularization of such studies as the Juke and Kallikak families which by the way, I believe, have been quite definitely discredited by most scientific observers. Not enough emphasis has been placed upon more recent studies along these lines made by observers such as Dr. Canavan of Boston and others in which a more scientific approach to the study was made in using a normal control group. Those of you who are familiar with Dr. Canavan's findings will recall that she found almost as many psychotic individuals in the progeny of a normal group as he did in the abnormal group and many more feeble. I think it is recognized by all that

ground upon which certain types of functional mental disorder arise may be transmitted just as is the physical status, et cetera, but that one must place greater weight upon environmental factors and the experience of the individual as it is concerned in the development of personality than upon the definite hereditary factors, and that psychoses as such are not transmitted. Dr. Wright has outlined admirably well the intramural activities of the average state hospital and has given some mention to the social service department which acts as a liason between the hospital and the community.

We recognize in all this a vast improvement upon the old setup of the hospitals of even fifteen

or twenty years ago, but it seems to me the outstanding need today is for ever increasingly active educational programs for all groups and particularly the medical profession which for some reason has failed to show a wholesome attitude toward psychiatry. As I have said before, it seems to me this difficulty will be met by improved curricula in psychiatry in the medical schools of the country which, I think I am safe in predicting, will manifest itself in the very near future.

I am happy to have had the privilege of studying Dr. Wright's paper prior to his presentation today and also feel it is a privilege to have had the opportunity to discuss it.

### NEARING THE LIMIT OF LONGEVITY

Some of the health experts are wondering if New Zealand is now nearing the top score attainable in longevity in our present state of medical knowledge and skill. It seems that the male infant born there can expect on an average, to live 65 years and the female to within six weeks of 68 years. This puts New Zealand in first place among all countries in the world. Of course, the question whether it is better to live a shorter time in America than a longer time in New Zealand does not enter into this particular discussion. The *Statistical Bulletin* of the Metropolitan Life Insurance Company informs us that the mortality in the first year of life among the white population of New Zealand is only 38.35 per 1,000 for males and has reached the exceedingly low figure of 25.48 for females. The corresponding figures for the white population of the United States in 1930 are 60.86 and 48.21. Perhaps nothing could testify more eloquently to the excellent health management in New Zealand than this low mortality among babies. For at that stage of life everything depends on proper

care of the mother and child. Nowhere along life's path can effort be expended with greater effect. Infant mortality is at best a high figure, from which any percentage curtailment means a large absolute gain. As the child grows older, it enters a zone of low mortality, with a minimum of not much over 1 per 1,000 per annum about age 10. The opportunities for improvement here are small, and can at best result in only slight saving. On the other hand, toward the late period of life, when mortality again mounts to high figures, the causes of death belong increasingly to a class against which we have far less efficient means of defense than those which have so successfully been brought to bear on mortality from the infectious diseases and the principal diseases of early infancy.

In view of these facts, it seems that we cannot look in the near future for the addition of many more years of life to the average already achieved by our fortunate contemporaries in the Antipodes.

### POLIOMYELITIS IN CALIFORNIA

Doctors are being besieged by anxious parents who wish to know if it is safe to take their children to California, where an increase in the incidence of anterior poliomyelitis is reported in the Los Angeles area. The advice of the *Jour. Am. Med. Assoc.* is that "it is not considered safe to send a small child into the vicinity," for "the danger is definite and should not be assumed if it is avoidable." Moreover, we are warned, a child under six years of age falls within the most susceptible age group and for this reason would be subjected to a special hazard if taken

from a noninfected area into an infected area. It is, moreover, especially difficult to protect a child against contact with infantile paralysis, since the disease seems to be distributed by carriers, as are also scarlet fever and diphtheria, so that the child might become infected from a person who is apparently well. Epidemiology establishes the fact that infantile paralysis, like epidemic encephalitis, clears up with the coming of cold weather. In the Los Angeles area the first really cool weather may not be expected until November or December.

### HE MERELY NEEDED A DOCTOR

A story to illustrate the need of the general practitioner is told by the editor of a medical journal in the Midwest. He found in his trip to the Cleveland meeting of the American Medical Association that everyone was talking about the general man, about how he has been getting the worst of it, and about what can be done to help him. Medical meetings give too much time to the specialists and laboratory men, thinks this observer, and the general man would be more interested in a conference where actual bedside experiences are exchanged. The story he relates was told by one of the heads of a famous clinic

some years ago at a meeting in Philadelphia: A patient had entered the clinic, and after some two weeks of observation a diagnosis had not been made. Then the patient died. The clinic head, desirous of knowing just what had been going on, went to the autopsy room just before leaving for Philadelphia. He inquired as to the findings and was advised that they were nil. He remarked that something must have been wrong and asked, "What was the cause of death?" The pathologist answered, "The man died of too many examinations; what he needed was a doctor!"

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## EDITORIALS

### Anesthesia and Loyalty

Somewhere about five and twenty years ago physicians in a certain large institution (not the hospital or its superintendent) considered the practical results in anesthesia and found them wanting. Being exceedingly practical physicians, they thought only along immediately practical lines. Anesthesia by technicians (largely graduate nurses) came into being. The remote implications and results of anesthesia by technicians were, however, overlooked. These pioneer physicians, superb in their work and widespread in influence and associations, were quickly copied (the sheep quality of cerebral activity prevails among physicians as in the cloak-and-suit trade or the automobile industry). First, surgeons, then hospital managements embraced the idea for good and varying reasons, mostly interesting but not under discussion at this time. Gradually the licensed physician-anesthetist was replaced. In many Eastern hospitals, nurses, trained in the routine of inhalation anesthesia, have been substituted. Good routine results have prevailed in most instances.

Specialists in anesthesia have developed but slowly in number during the ascendancy and reign of this style. However, some

of these specialists and some physiologists, chemists, and pharmacologists have separately and together greatly enlarged the field of anesthesia by evolving new agents and new methods of administration. Local, regional, and spinal anesthetics are more used than formerly. The field is now a broad specialty, requiring as much general medical, clinical, and technical training as any of the specialties.

The work is, as it has always been, an element of the practice of medicine. Thus some physician (usually the operating surgeon) is directly civilly and legally responsible for the acts of the nurse-anesthetist. Indeed, for all the work done by thousands of technicians "to diagnose or treat," the Medical Practice Act holds a few physicians responsible. Can they afford to carry the load? The domain of medical practice has been largely eroded while the obligations, the responsibilities of physicians, have been inexorably increasing.

In 1933, the House of Delegates voted a brace of uncompromising resolutions concerning anesthesia, which insisted that physicians and dentists re-assume all practice of anesthesia. These resolutions were preceded by an explanatory preamble intelligible to any reader. The House of Delegates of 1934 re-affirmed these resolutions and ordered the New York State delegates to present them for the consideration of the American Medical Association. That said resolutions have caused discussion among our kind is well known. Most of the defenders of the *laissez faire* régime fail to consider any but routine inhalation anesthesia. On the other hand, many of those who condemn anesthesia by technicians present woefully limited arguments. We recommend the preamble of the resolutions to their attention.\*

Recently a skilled surgeon in a famous city of the State at a public (not medical) meeting declared (according to press reports) "that the sponsors of the movement [against nurse anesthetists] are not inspired by altruistic interest in the welfare of the patient but by 'purely selfish motives.'" The New York State Medical

\* *New York State Journal of Medicine*, June 15, 1934, p. 553.

Society," he said, "is one of the organizations backing the ban on nurses." Also, "Most of the doctors administering anesthetics are 'misfits' who are simply waiting for something better to come along." He warned that anesthetics unskillfully administered by physicians without the necessary training would cause a sudden rise in the mortality rate among convalescent patients. Doctors, as a rule, do not give good anesthetics. "Certain dissatisfied elements in the medical profession maintain that the administering of anesthetics is the enterprise of doctors only. They do not persuade that their reasons for banning the nurse anesthetist are altruistic ones nor that the trained nurse does not properly administer anesthesia. They are simply seeking a law to prevent something. That's the fashion in this country at the present time."

This surgeon is a member of the Society whose resolution he publicly denounces. Why not protest to the Society before condemning its action? Had he taken the trouble to talk with State Society officers or committeemen, even though he cared not to attend State Society meetings, he would have learned much of which he seems (via press reports) to be ignorant. Does he recognize advances and elaborations in anesthesia? Or is he content to jog along in the trail blazed during his early days of training? Has he looked westward and observed progress in anesthesia there? Where are the specialists in anesthesia of the future to be trained? Does he know that some malpractice insurance may be void if death takes place under anesthesia not conducted by a licensed physician? Is it desirable to maintain the integrity of the Medical Practice Act? Indeed our violent confrère has much to learn about this subject before he will be justified in an attack upon his own State professional organization. Most of this physician's colleagues in the State have quite as much "altruistic interest in the welfare of the patient" as he can boast. Of this he has no monopoly and such a declaration as his smacks slightly of excessive self-adoration and self-praise. But in the main his disloyalty is the result of deficient understanding. The operator of an automobile who,

through ignorance, does damage is just as guilty of "reckless driving" as the expert driver whose aggressive disregard of rules results in accident.

This incident, of itself, is a trifling affair. Because it is an example of what happens frequently, it is *important*. Scientifically learned men sometimes allow themselves to be cajoled by laymen into attacking their colleagues. Lacking understanding of the larger part or the larger view of the subject they indulge in loose talk, and in order to thrill their hearers utter broad generalizations condemning many or all of their kind. This delights and encourages the enemies of modern scientific medicine who are the enemies of the people. We physicians are thinking and laboring first and always for our patients. Implications or bald statements to the contrary are indeed disloyal. Loyalty is based on understanding. If understanding could lead one to condemn something about our organization, then that would, in turn, be loyalty. However, the first attack should take place *within the organization*. The discussion there provoked would invariably be enlightening to all. Such external tirades as the one quoted are like the pebble thrown into a placid pool. Impulses are carried far in the widening circles activated by the cleavage. The JOURNAL deprecates public attacks upon our organization by a member who knows he has not complete information before he starts his denunciatory generalizations. Such performances are always vicious in their influence but most dangerous when they come from outstanding men of large accomplishment. *Responsibility increases directly in proportion to knowledge, gifts, and influence.*

Understanding has two phases: understanding of facts and their relationships, and understanding of other involved people. If we are painstaking in searching for facts, accurate in noting them, strictly fair in the interpretation and balancing of them, our conclusions will be just and probably right. If we discuss them among ourselves before addressing the public we reach the second stage of understanding. When understanding is complete we can choose between loyalty and disloyalty. One hundred to one it will be loyalty!

## One on Darwin?

As we have seen world records fall again during the athletic meets in the past few weeks, we may not have realized that one of the defeated was none other than the great thinker whose work on the origin of species is in every scientific library. As we see our splendid young men and women walk the street, inches taller than their forbears, we may not have sensed the fact that they are turning the old scientific ideas topsy-turvy.

For the world-shaking theory of Darwin and Spencer was the Survival of the Fittest. The struggle for survival, they said, eliminated the weaklings, leaving the strongest who reproduced more strong ones, so that the continuous battle kept producing stronger and stronger specimens, while the feebler ones fell by the way and disappeared. That explained how the human race evolved from the animal kingdom and why the race is growing stronger and better all the time.

Fine. The entire scientific world accepted it as gospel. But, strangely enough, in recent years we have been going just contrary to its teachings. Instead of intensifying the battle, to bring out the strong ones in all their glorious supremacy, medical science has outdone itself and gone to all lengths to save and coddle everybody, strong and weak alike. Infantile diseases that used to sweep the babies off like flies have been simply abolished. The infant death rate has been cut in half. The struggle for existence has been reduced to a pillow fight. Babies that formerly would have taken a quick trip to the cemetery now grow up and take prizes in college.

Well, what is the result of this reckless disregard of Darwin's dictum? If he was right, we should have about now a world of invalids, cripples, crook-backs, and crocks of all descriptions. Instead of that, we have what is probably the finest display of health, strength, and beauty among our young people that the world has ever seen. Our young men can run faster, row faster, jump higher and farther, and throw weights farther than ever before known, and as for our young women, nothing ever done by the women of the past even comes into comparison.

It is not necessary to say that Darwin was wrong. It would be a brave critic indeed who would go to that length. But is it not possible to suggest that we have found another, perhaps a better, way to improve the race? The doctrine of the Survival of the Fittest would eliminate the weak. If they cannot stand the pace, let them perish. Better so. That was the gospel of Darwin and Spencer. The new gospel is an advance on that. Make the weak strong! That is what the medical profession are at, seven days a week, year in and year out. And the new gospel works!

Sir Christopher Wren said: "If you would see my monument, look around you!" He built churches. The modern physician can say: "If you would see my work, look around you!" And a world of health and happiness is his monument, and a monument to medicine's New Deal of survival and fitness for all.

## A Study of 35,000 Malpractice Suits

Something like 4,000 suits a year, or over ten a day, are brought against the doctors in the United States for malpractice. This mere statement shows the gravity of the situation and gives point to an exhaustive study of the causes of these suits, made by two Massachusetts surgeons, Dr. Halbert G. Stetson, a former president of the Massachusetts Medical Society, and Dr. John E. Moran, who is associated with him in the County Hospital at Greenfield. They have obtained information from liability corporations and physicians on 35,000 cases, and publish their findings in the *New England Journal of Medicine* (Boston).

To come at once to the principal cause, however unpleasant it may be, they find that 60 per cent of the suits are due to "inopportune remarks" by subsequent attending physicians, slighting or slurring statements that suggest to the patient's mind that the first doctor blundered and that he can realize something from a lawsuit. These remarks may be almost involuntary or unintentional, or they may be charged with the venom of professional jealousy. They may be wordless. A lift of the eyebrow, a shrug of the shoulder, is

enough. Some informants put the proportion of suits due to these professional aspersions as high as 80 per cent of the total. A doctor may be unwittingly trapped into a criticism. A specialist, for instance, is visited by a patient he has never seen before, gives his opinion, and, months later, is summoned as a witness in a suit. A doctor is asked a hypothetical question by a lawyer friend. He answers offhand, and a little later finds he has to answer it before a jury. These are among the "inopportune remarks" that start litigation.

Worse, however, are the barbed criticisms made by physicians embittered by personal enmity, animosity, and professional jealousy. These men perhaps do not realize that they are fanning a fire that may burn their own fingers some day, for one suit kindles another, and, next time, they may find themselves brought to court and mulcted to the tune of hundreds or thousands of dollars. One informant put the number of suits due to "inopportune remarks" at 65 per cent—45 per cent incautious and 20 per cent "undoubtedly due to professional jealousy, self-assurance, and superiority psychology." The authors recall the statement of a famous (if mythical) old New York State resident, none other, in fact, than Rip Van Winkle, who said after one of Dame Van Winkle's outbursts of temper: "A tart tongue never mellows with age, and a sharp tongue is the only edged tool that grows keener with constant use." Volumes have been written on the mischief done by this unruly member, but evidently without making it much better.

Next, in order of importance, are the counterclaims brought because the physician is trying to collect his bill. Such suits, of course, are hardly avoidable, but the doctor can have his records in such good shape as to insure an iron-clad defense.

Fractures, it appears, cause a large number of malpractice suits. No less than 90 malpractice suits based on fractures were pending in Boston alone at one time. One investigator attributes 90 per cent of the fracture malpractice suits to the absence of x-rays, divided thus: diagnosis missed, 56 per cent; a complication overlooked, 18 per cent; malunion not recognized, 12 per cent; allegation by hostile practitioner

could not be refuted, 4 per cent. The remaining 10 per cent are laid to the adverse criticisms mentioned above.

How can these suits be avoided, or, if not avoided, successfully defended? First of all, the physician should keep an accurate and detailed record of his treatment of the patient, copies of prescriptions, x-ray pictures, all details of operations. The so-called "practical" nurses are often lax in making records, and the doctor should keep a watchful eye on them. Consultations are advisable when the case is serious and the family look like trouble-makers. Pathological examinations are a help, too. Consent should be secured before an operation, in writing if the character of the parties is at all dubious. The consent should cover unforeseen complications that may appear during the operation while the patient is under anesthesia. The writers have put in a nutshell the following five "best safeguards against malpractice": (1) A cautious tongue. (2) Proper use of the x-ray. (3) Accurate and complete records. (4) Adherence to the code of medical ethics and application of the Golden Rule in the care of patients who have been previously attended by another physician. (5) A knowledge of the accepted forms of treatment.

Doctors must not imagine, either, that their insurance relieves them from payment. The policy holder always pays the bill. If he does not believe it, let him read the experience of the New Haven Medical Association. Their insurance company in seven years expended \$44,597, while the amount deposited by the group with the company was only \$18,127. What happened? The company notified the Association that future payments must be four to six times more than they had previously paid! Note, too, that this increase fell not only upon the doctors who have been mistaken in their diagnosis and treatments, but equally upon those who let fall the acid drops of unkindly criticism. So justice has a way of attending to its own punishments in the long run and of administering its own bitter dose where it is needed. A much pleasanter medicine would be the prescription adopted in the hard-headed world of trade: "Boost, don't knock."

# Medicolegal

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## Chiropractors—Illegal Practice of Medicine

The members of the medical profession have been for many years witnesses to the attempts of the chiropractors to secure the passage through the State Legislature of a bill which will give legal sanction to their practices. Fortunately their attempts to change the Medical Practice Act have thus far failed. Recently a different sort of attempt on the part of a chiropractor to gain the sanction of law through the courts has been thwarted in a case decided by one of our criminal courts a few weeks ago.\*

A proceeding was instituted against a certain chiropractor in which he was charged with engaging in the practice of medicine without a license. The charges were that on certain specified occasions he had diagnosed and treated certain human ailments in accordance with the theory and methods of the art of chiropractic. The defendant made an application to the court to dismiss the charges on a number of specified grounds. Several of the grounds of his application were technical and of no particular general interest. However, the principal theory relied upon by the chiropractor was that the sections of the Education Law under which he was being prosecuted were unconstitutional. He claimed that the provisions of that law, which defined the practice of medicine and prescribe the requirements to be met before a person is entitled to practice, were in violation of the Fourteenth Amendment of the Federal Constitution, and also in violation of the New York State Constitution.

The particular sections he claimed to be applicable were that portion of Amendment Fourteen of the Federal Constitution which reads as follows:

"Nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."

and also the language contained in Article 1, Section 6, of the State Constitution as follows:

"No person shall be \* \* \* deprived of life, liberty or property without due process of law."

The court in passing upon his application summarized the chief contentions of the chiropractor as follows:

"Upon that question the argument is made by the defendant, who is a chiropractor, that there has been a revaluation of his art of healing since the Education Law was enacted so as to require the court to hold that decisions by Legislatures of this State since the enactment of that law in refusing to make a special classification for his type in the art of healing, has resulted in discrimination. He claims that changes in our social concepts, in our economic conditions, in our new attitude toward constitutional interpretation which today is based upon the sociological point of view rather than upon the legalistic theory, and new information concerning his method of treatment of disease, must and should impel the court to decide that the relevant provisions of the Education Law and the failure of the Legislature to classify his method of treatment has resulted in discrimination. He has marshalled in his brief a great many facts, data, statistics, information, testimony, etc., which he claims sustain this argument. He maintains that because of such facts and information, data, etc., the time has come when the court should say that the law is discriminatory because of the failure to make special provision for his type of healing. Substantially these facts are that chiropractic is now legally recognized in nearly every State of the Union; that scientific men have recognized its principles and its efficacy as a healing art; that thousands practice this art in most of the States of the Union where the same is regulated and permitted; that in this State a great number are practicing even though not regulated; that patients in great numbers are being treated and want to be treated by this method, having recognized the same as an efficient method in the treatment of the ills of the human body; that law today is interpreted in an attitude based upon changed social conditions rather than merely following prior decisions. Added to this is the claim that the many exceptions contained in the law permitting limited practice has resulted in discrimination; has opened the door to others while prohibiting the defendant."

In its opinion in ruling against the defendant's theories and arguments, the court stated in part the following:

"We must assume that all the facts and information and revaluations claimed by defendant appeared before the Legislature. We must also assume that there appeared before the Legislature other facts, namely, that the educational standards in the field of the treatment of the

\* *People v. Lee*, 151 Misc. 431.

human body have been raised in the past three decades; that qualifications as to education, training, etc., are far greater today than they were when the law was enacted, and that year after year higher standards have been set up for those desiring to practice the art of healing, at least in New York State. It must have also appeared before the Legislature that the standards of education have been so elevated that it has become almost impossible to gain entrance into a medical school. It certainly appeared before the Legislature that the chiropractor claims to be able to diagnose and treat nearly all human ills. With such information and facts before the Legislature, it is conceivable that they had a reasonable belief in the existence of conditions which required the enactment of the present law and the refusal to grant a separate classification for chiropractic. If this court could say that the Legislature had no reasonable belief in the existence of facts which was the basis of its action or under no possible circumstances could the Legislature form such a belief, then would it be justified in declaring the law arbitrary and unreasonable. But enough appears to indicate that the Legislature did have a reasonable belief in the existence of facts which caused it to act as it did. It was within the province of the lawmakers to say to the defendant upon the facts appearing before them: 'You are practicing the art of healing; you claim to do exactly what the doctor of medicine does in the diagnosis and treatment of human disease and ailments; you claim that you can cure all manner and forms of disease, and even though you deny the germ origin of disease and believe that all ills originate with the impingement of nerves in the vertebrae, we demand that your preliminary qualifications and training should be the same as that which we require of the doctor of medicine. In other words, we say to you that you must have the same qualifications even though you have a different method in the treatment of disease, and even though you may never use some of the knowledge which you may acquire as a result of your preliminary training.'

In effect, that is all the Legislature has done through the present Education Law and its refusal to create a new classification for defendant. With such a decision on the part of the Legislature the courts cannot quarrel because there appears to be a reasonable basis for such action, namely, the reasonable belief in the existence of facts which required the enactment of the relevant provisions of the law. There appearing, therefore, a reasonable basis for the action of the Legislature, the court cannot hold that the relevant provisions are arbitrary or unreasonable. As the law stands today, it simply requires of the defendant that before he can practice his art of healing, he must comply with the same requirements as does the doctor of medicine. The refusal to amend the law to include defendant and give him a different classification than the doctor of medicine, based upon a training not as great as that required of the doctor of medicine, is no ground for declaring the present law unreasonable or discriminatory, especially if his claim be that he is doing exactly the same thing that the doctor of medicine is doing in diagnosing and curing disease even though by a different method. Whether the Legislature was wise in acting as it did upon

such facts is no concern of the court. We are only concerned with the proposition as to whether facts appeared before it that justified the conclusion arrived at.

The defendant claims that as the law stands today he is prohibited absolutely from practicing his profession. If to require him to have the same qualifications and training as is required of the doctor of medicine is prohibition, then the argument is sound, but the answer is found in the fact that the Legislature had a right to place the same preliminary requirements upon him as upon the medical doctor, and his refusal to comply with such requirements is the cause of the prohibition, rather than the specified requirements of the Legislature. *To claim that it is arbitrary and unreasonable to place him in the same class as the medical man, is not well founded if it appeared to the Legislature that there is not much distinction between what he claims he can do and what the doctor of medicine claims as to diagnosis and cure.* The only apparent differences are (1) as to the theory of the origin of disease, and (2) as to the method of cure.

The defendant further claims that the relevant sections of the Education Law having made a classification for osteopaths, dentists, chiroprodists, etc., and not having made any provision for him, has resulted in discrimination; that because the door has been opened by the Legislature to the osteopath and to others limited in the art of healing as to method, etc., that, therefore, he has been discriminated against, and for that reason the law is unconstitutional, but here again facts and conditions appeared before the Legislature indicating that there was a reasonable basis for the separate classifications made by the Legislature. It at least had a reasonable belief in the existence of these facts. In the case of the osteopath, while his practice is limited in method, the qualifications and preliminary training required of him are almost coextensive with that of the doctor of medicine, and there appears the further fact (in so far as that art of healing is concerned) that the osteopath is trained in schools approved by the Education Department of the State of New York in so far as its standards and curricula are concerned, while the schools of the chiropractic, because of limited curricula, are not recognized. There presumably appeared before the Legislature facts from which they could have arrived at the conclusion that the object desired, namely, proper treatment of human ailments, will not be prejudiced by letting in the osteopath because of the fact that he is trained in schools which require of him the study of those subjects which the medical doctor is required to study, and there must also have appeared before that body the fact that chiropractic schools do not provide for the same training.

If we can conceive of a state of facts showing a difference between the osteopath and the chiropractor, whether we agree with the facts or not, we are bound to hold that the law is reasonable and not discriminatory in its classifications; that such a state of facts can be conceived is apparent from the statements of facts in the briefs submitted to this court, namely, the method of preliminary training and qualifications, the first approved by the Education Department and the second apparently not.



It has been held time and time again that the power to classify in the adoption of police laws admits the exercise of a wide scope of discretion in the Legislature. *Only when there is no reasonable basis and it is purely arbitrary, may a classification be held to be unconstitutional. A classification having some reasonable basis does not offend merely because it is not made with any mathematical nicety or because its practice it results in some inequality.*"

The decision of the court is highly gratifying, and it is unquestionably the only correct and proper one. If the decision should be appealed from, we trust and believe that the Appellate Courts will promptly and without any hesitation affirm the ruling.

### Loss of Eye Caused by Infection

A general practitioner was called to attend an 11-year-old child whom he found in bed with a marked swelling on the right side of the face, particularly about the maxillary sinus. The doctor examined her nostrils and found a swelling on the lateral side of the vestibule of the nostril. He prescribed Burrow's solution and advised the mother to apply it to the face and nose of the child as a wet dressing. The next day he examined her face again and found the swelling in her nose larger, although the face was no more swollen. The doctor determined the condition to be a furuncle in the nose. At that time there was no swelling in the region of the child's eyes and she made no complaint about her eyes. He called in another doctor to act as anesthetist and with a scalpel incised the furuncle after ethyl chloride anesthesia had been administered. A profuse discharge of pus was obtained. The doctor swabbed the incision with iodine and inserted iodoform packing. He advised the mother to continue with the wet dressings. The next day the child's condition was greatly improved. The doctor kept in touch with the patient's parents by telephone and learned that her condition was satisfactory until a week after the operation had been performed. At that time the doctor was told that the child's eye was affected. He called at the child's home and found the eye protruding with a large swelling below the eye.

The doctor diagnosed the condition to be an infection of the eye cavity which had been caused by the passage of pus from the maxillary sinus into the ethmoid sinus. He turned the case over immediately to an eye specialist who subsequently found it nec-

essary to remove the eye. The doctor who removed the eye determined that the infection that developed was a colon bacillus infection, and was therefore not connected with the first doctor's treatment.

An action was instituted to recover for alleged malpractice on the theory that the doctor had used dirty and unsterilized instruments in operating upon the child at its home, and had thereby set up the infection that subsequently caused the child to lose her eye. The case was ready for trial in its regular order on the calendar and was answered "ready" by the plaintiff's attorney. When the case was called for actual trial, however, neither the plaintiff's attorney nor any of the plaintiff's witnesses could be found. On motion of defendant's attorney the action was dismissed.

### Treatment of Cat Bite

A 12-year-old girl was brought to the office of a general practitioner and the doctor was told that a week before the child had been bitten by a cat. He found that the little finger of her left hand was healed over by a small scab, but that the child was suffering from lymphangitis and swelling in her left armpit. He applied an antiseptic to her finger and ordered wet dressings on the finger and an ice bag under the left axilla. The doctor saw the child thereafter from time to time for about two weeks and the child kept improving during that time. However, after such improvement the glands suddenly became large and painful and quite hard. The doctor informed the child's parents that he might have to open up the glands, but that the condition was not at the time ripe for incision, and he directed the parents to continue the ice treatment. Before the doctor determined definitely whether or not an incision should be made, the patient was taken to another doctor who took the child to a hospital and drained an abscess which had developed. It seems that at the hospital injections of tetanus antitoxin were administered to the child, although there were no symptoms of tetanus.

Some time thereafter a malpractice action was instituted against the general practitioner who attended the patient and the principal charge made on behalf of the child was that the doctor had not administered tetanus antitoxin.

The case came on for trial before a

judge sitting without a jury. The plaintiff called as a witness the surgeon who operated on the child subsequently to the treatment rendered by the defendant, and he testified that the condition which he observed and treated was nothing more

than a case of lymphangitis running its ordinary course. After all the testimony had been put in by both sides, the court directed a verdict in favor of the doctor thereby exonerating him from the charge of malpractice.

## Books

### BOOKS RECEIVED

**The Medicolegal Necropsy.**—A Symposium held at the Twelfth Annual Convention of the American Society of Clinical Pathologists at Milwaukee, Wisconsin, June 9, 1933. Edited for the Society by Thomas B. Magath. Octavo of 167 pages, illustrated. Baltimore, Williams & Wilkins Company, 1934. Cloth, \$2.50.

**The Chemistry of the Hormones.**—By Benjamin Harrow, Ph.D., and Carl P. Sherwin, M.D. Octavo of 227 pages. Baltimore, Williams & Wilkins Company, 1934. Cloth, \$2.50.

**The Chances of Morbid Inheritance.**—Edited by C. P. Blacker, M.D. Octavo of 449 pages. Baltimore, William Wood & Company, 1934. Cloth, \$5.00.

**Handbook of Therapeutics.**—By David Campbell, M. D. Second Edition. 12mo. of 444 pages. Baltimore, William Wood & Company, 1934. Cloth, \$4.75.

**Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association, for 1933.**—12mo. of 188 pages. Chicago. American Medical Association, 1933. Cloth, \$1.00.

**New and Nonofficial Remedies, 1934.**—Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1934. 12mo. of 510 pages. Chicago, American Medical Association, [c. 1934]. Cloth, \$1.50.

**Handbuch der Allgemeinen Hämatologie.**—Hrsg. von Dr. Hans Hirschfeld and Dr. Anton Hittmair. Band II, Heft 2. Octavo of 1627 pages, illustrated. Berlin, Urban & Schwarzenberg, 1934. Paper, Rm. 60.00.

**Modern Clinical Syphilology.**—By John H. Stokes, M.D. Second Edition. Octavo of 1400 pages, illustrated. Philadelphia, W. B. Saunders Company, 1934. Cloth, \$12.00.

**The Essentials of Physical Diagnosis.**—By Robert W. Buck, M.D. Octavo of 259 pages, illustrated. Philadelphia, W. B. Saunders Company, 1934. Cloth, \$3.00.

**Child Guidance Clinics.**—By George S. Stevenson, M.D. and Geddes Smith. Octavo of 186 pages. New York, The Commonwealth Fund, 1934. Cloth, \$1.50.

**International Clinics.**—A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, etc. Vol. 2, 44th Series, 1934. Louis Hamman, M.D., Editor. Octavo of 317 pages, illustrated. Philadelphia, J. B. Lippincott Company [c. 1934]. Cloth, \$3.00.

**A Text-Book of Pharmacology and Therapeutics.**—By Arthur R. Cushny, M.D. Octavo of 786 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$6.50.

**The International Medical Annual.**—Year Book of Treatment and Practitioner's Index. 52nd Year, 1934. Edited by H. L. Tidy, M.D., and A. Rendle Short, M.D. Octavo of 579 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$6.00.

**The Medical Clinics of North America.**—Vol. 17, No. 6, May, 1934. (Index Number.) Published every other month by the W. B. Saunders Company. Philadelphia and London. Per Clinic Year (6 issues), cloth, \$16.00 net; paper, \$12.00 net.

**Collected Papers of the Mayo Clinic and the Mayo Foundation.**—Edited by Mrs. Maud H. Mellich-Wilson and Richard M. Hewitt, M.D. Vol. 25, 1933. Octavo of 1230 pages, illustrated. Philadelphia, W.B. Saunders Company, 1934.

**The Anaemias.**—By Janet M. Vaughan. Octavo of 248 pages, illustrated. New York and London, Oxford University Press, 1934. Cloth, 12/6.

### BOOKS REVIEWED

**The Physician's Art.**—An Attempt to Expand John Locke's Fragment de Arte Medica. By Alexander G. Gihson. 12mo. of 237 pages. Oxford, The Clarendon Press, 1933. Cloth, \$3.00.

This delightful little book is, as the Author states, "an attempt to expand John Locke's fragment De Arte Medica." The first chapter consists of a brief account of Locke's leaning towards medicine, followed by a reprint of the fragment (1689), which is, indeed, a quaint document. There are seven other chapters and an index. The author has amplified the fragment in a manner well befitting the times in which we live. His remarks on art and science, diagnosis, prognosis, on treatment and the ethics and management of practice, on the doctor himself, and on optimism are opportune and appealing. To the younger physicians of to-day, this book should possess a very high value, to the older groups a real charm. It can be profitably read and re-read.

J. M. VAN COTT

**Recent Advances in Vaccine and Serum Therapy.**—By Alexander Fleming, and G. F. Petrie. Octavo of 463 pages. Philadelphia, P. Blakiston's Son & Company, 1934. Cloth, \$4.00.

This book is divided into two parts. Part 1 deals with serum therapy and Part 2 with vaccine therapy. The writers have reviewed the recent literature on serum and vaccine prophylaxis and therapy in a number of diseases and present the information thus gained in a series of short chapters. In each chapter they describe methods of preparation of serum or vaccine, dose and methods of administration, and analyze the results obtained by different workers. The diseases discussed include diphtheria, tetanus, gas gangrene,

scarlet fever, pneumonia, meningitis, virus diseases, typhoid, dysentery, cholera, pertussis, colitis, gonococcus infections and numerous other conditions.

The technical worker will find here much technical information and the clinician can obtain a wealth of data which will be valuable in deciding when and how to use this form of therapy.

E. B. SMITH

**The Foundation of Psychology.**—By Jared S. Moore, Ph. D., and Herbert Gurnee. Second Edition, revised. Octavo of 287 pages. Princeton, N. J., Princeton University Press, 1933. Cloth, \$3.00.

This book contains matter not usually found in the ordinary textbook on psychology, and it presupposes a previous knowledge on the subject. It cannot be recommended as light reading; but any person who wishes a review of the various schools of psychology will find within these pages a thorough-going discussion of the many theories of thought which have been advanced.

There are three parts: first, the various definitions or conceptions of psychology which have been suggested in the past and are being extended to-day with the aim of drawing synthetic and positive conclusions as to the merits of these various conceptions; second, the field of scientific psychology, its distinctiveness from metaphysics, on the one hand, and from physical and biological sciences, on the other; third, the postulates necessary for the construction of a scientific psychology with special attention paid to the problems of parallelism, psychical causation, and the subconscious. The discussion on the subconscious is of special value to any physicians who are interested in a clear understanding of medical psychology.

JAMES L. MCCARTNEY

RECENT ADVANCES IN THE TREATMENT OF  
EPIDEMIC ENCEPHALITIS

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The treatment of epidemic encephalitis is as yet purely empiric. The causative agent has not been definitely proven. Of course, determination of the agent might not be of much help in therapy. This is certainly true in infantile paralysis, which is known through experimental transmission to be due to a specific filtrable virus. Moreover, the finding of a specific method of treatment need not wait on the determination of the cause. It was known that quinine was specific in malaria and mercury in syphilis long before the plasmodium of malaria or the *Spirochaeta pallida* was discovered. Certainly the effects of epidemic encephalitis are so terrible that finding a cure for this disease is one of the most challenging problems that confronts the medical profession.

An accurate appraisal of the value of any method of treatment of epidemic encephalitis is extremely difficult. If a therapeutic measure is used in the acute stage of the disease, two questions immediately arise: first, does it lower the case fatality, and secondly, does it lessen the possibility of the development of the chronic stage. The case fatality of acute epidemic encephalitis has varied greatly in different outbreaks and it is impossible to say whether or not it has ever been modified by any of the many methods of treatment that have been used. To prove the value of a remedial agent, it would need to be used on a large number of patients and the results compared with those of an untreated control group. The second question is answered with even more difficulty. A group of cases treated in the acute stage must be followed for years, and the percentage developing the chronic stage must be compared with a control group.

It is also difficult to estimate the value of any method of treatment in the chronic stage of epidemic encephalitis. Remissions and progressions develop for no apparent reason and last for considerable periods of time. New symptoms appear while others subside. Of course, if a therapeutic measure were found that abruptly halted the progress of symptoms or, better still, produced a marked and permanent regression of symptoms in all patients in the chronic stage, it would be easy to recognize its value. No such remedy has as yet been found.

One can hardly discuss the question of therapy of epidemic encephalitis without referring briefly to the problem of etiology. In general there have been three theories: first, a toxic disturbance of the central nervous system, secondly, a neurotropic strain of the green streptococcus, and thirdly, a filtrable virus. The third theory has by far the most followers and, until recently, it has been more or less taken for granted that there was only one filtrable virus involved. While the identity of no virus has been definitely proved, considerable weight is given to the claims of the neurotropic herpetic-like virus, isolated several times abroad and in two instances in this country by Gay and Holden\*. Widely divergent opinions are held in regard to the etiology of encephalitis following various acute infections, particularly measles and vaccination. These forms of encephalitis do not differ in their acute manifestations from epidemic encephalitis, and some of the patients progress to a chronic stage. Moreover they

\* Gay F. P. and Holden M. Further Evidence for the Presumed Herpetic Origin of Epidemic Encephalitis. *Trans. Assn. Amer. Phys.* 48:16, 1933.

were reported very rarely before epidemic encephalitis became prevalent and yet their clinical picture is certainly so striking that they could hardly have been overlooked.

In the summer of 1933 an unusually large outbreak of encephalitis occurred in St. Louis. The symptomatology of these patients followed quite exactly the pattern of the meningeal type of encephalitis that has always represented a varying percentage of our cases. The etiological agent of this epidemic has been very definitely proved to be a newly isolated filtrable virus, pathogenic for mice. Serological studies are being made in an effort to determine whether or not this virus is implicated in other outbreaks of encephalitis and also its possible relationship to other viruses.

The possibility that the disease known as epidemic encephalitis may be caused by two or possibly more viruses complicates still further the question of therapy, particularly so far as possible specific agents in the way of serums or vaccines are concerned.

My own experience in treating epidemic encephalitis dates back to the fall of 1918, when the first cases were diagnosed in New York City. Since that time the members of the division of applied therapy of the Health Department have seen nearly a thousand cases of acute encephalitis, most of which were diagnosed as epidemic encephalitis. As a rule, these patients were treated only by lumbar puncture and by symptomatic measures. The average case fatality has been roughly 25 per cent, but this has varied quite widely when estimated year by year.

In my work with the Matheson Commission for Encephalitis Research I have had occasion to review the innumerable methods that have been used in the treatment of epidemic encephalitis, both in the acute and chronic stage. I have also had the opportunity of observing at the Neurological Institute more than 700 patients, mostly in the chronic stage, many of whom had tried several lines of therapy. A fair percentage of these patients have remained under the care of the Matheson Commission and have been treated by methods which will be described later.

The methods used in treating the various stages of epidemic encephalitis include most of the drugs listed in the pharmacopeia, all kinds of vaccines and serums and all known methods of physical therapy and psychotherapy.

It would be useless and tiresome to attempt to review the innumerable methods of therapy that have been used. Many of them were apparently tried for no reason whatever. In other instances drugs or other means of therapy were employed for symptoms that may arise in the course of many diseases and therefore have no particular relation to encephalitis. However, many measures have been used in an effort to destroy the infectious agent and to alleviate the symptoms characteristic of encephalitis and the various complications sometimes arising directly due to this disease.

#### METHODS OF TREATMENT

The more important of these measures may be listed as follows:

##### 1. METHODS FOR THE DESTRUCTION OF THE INFECTING AGENT.—These are:

###### A. Chemicals:

1. Acriflavine and other dyes.
2. Salicylates.
3. Iodine preparations.
4. Colloidal metals.
5. Arsenicals, including arsphenamine preparations.
6. Mercury derivatives, including mercuriochrome—220 soluble.

###### B. Production of febrile reactions:

1. Numerous nonspecific proteins.
2. "Fixation abscess."
3. Malarial inoculations.
4. African recurrent fever.
5. Fever-producing baths.

###### C. Serums:

1. Convalescent serum.
2. Rosenow's encephalitis antistreptococcal serum.
3. Gay's herpes hyperimmune rabbit serum.

###### D. Vaccines:

1. Levaditi's herpes recovered rabbit brain vaccine.
2. Gay's herpes hyperimmune rabbit brain vaccine.
3. Gay's formalized herpes virus.
4. Rosenow's streptococcus vaccine for encephalitis.
5. Stewart's Pfeiffer bacillus vaccine.

Since it is now generally believed that the chronic stage of the disease is caused by the continued activity of the infecting agent, measures aimed at the destruction of this agent would be applicable at all stages. It is unnecessary to state that most of these types of treatment have yielded results that have been unconvincing, when applied to a fairly large number of cases. Of course, an apparently striking effect is occasionally reported, but those of us who have observed large numbers of patients, particularly in the acute

stage, have seen unexpected recoveries when only lumbar puncture and symptomatic treatment were used. I would be inclined to rate most of the methods of treatment under *A* and *B* as of little or no value, and malarial inoculations as positively dangerous.

In considering *C*, the use of convalescent serum seems particularly unjustified in view of the fact that so many patients fail to produce sufficient antibodies to check the course of the disease in themselves. Moreover, if it is assumed that the disease is caused by a neurotropic strain of the herpes virus, it is important to note that Gay and Holden have shown that these patients are actually more deficient than the average in antibodies against the herpes virus. It would be a difficult task to select donors whose recovery was really assured.

Rosenow's encephalitis antistreptococcus serum would be justified only on the ground that a neurotropic streptococcus is the cause of encephalitis. The followers of this theory are comparatively few. The results published of its effects are not well controlled.

On the theory that encephalitis may be due to a neurotropic strain of an herpetic-like virus, Gay's herpes hyperimmune rabbit serum has been used intramuscularly on about 25 of the most critically ill patients in the acute stage, and on a few patients in the chronic stage of encephalitis. In several instances quite spectacular recoveries have followed the use of this serum, and the case fatality has been lower than in a control group of patients in an apparently equally serious condition. However, unexpected recoveries do take place in patients not receiving possibly specific treatment and the number is too small to admit of definite conclusions.

We have had more experience in the use of vaccines. In planning the study of treatment, the Matheson Commission was confronted with two main theories in regard to the etiology of epidemic encephalitis: that it might be a form of the herpes virus, as claimed by Levaditi and others; or that it might be a neurotropic form of the *Streptococcus viridans*, as claimed by Rosenow and by Evans and Freeman.

It was therefore planned to carry out treatment by measures that might be specific for these two possible etiologic agents, namely Rosenow's encephalitis antistreptococcus serum and vaccine and Levaditi's rabbit brain vaccine. Levaditi's vaccine

was prepared by injecting his neurotropic herpes virus *C*, originally obtained from a case of encephalitis, intracerebrally into a group of rabbits, using such a dose that a part of the rabbits died and the remainder recovered after showing symptoms of encephalitis. The brains of the rabbits that recovered were emulsified, and after sterility tests were used as a vaccine. The vaccine was first prepared for us in Dr Gay's laboratory from a strain sent to him by Levaditi. In a short time, however, the strain lost its virulence so that none of the rabbits thus given injections died. After some experiments, Dr Gay devised a method of immunizing rabbits with a dermatotropic strain of herpes virus. These rabbits were then tested for immunity by the repeated intracerebral injection of multiple lethal doses of a strain of herpes virus isolated by Perdrau from a case of encephalitis. The brains of rabbits found to be immune were used to make a vaccine that Dr Gay has designated as the hyperimmune rabbit brain vaccine. These rabbits were also bled, and the serum was used in the treatment of patients with acute encephalitis.

During the past year we have been using a vaccine prepared by Drs Gay and Holden consisting of a formalized herpes virus. They have shown that in rabbits the formalized virus stimulates the production of antibodies much more regularly than does the hyperimmune rabbit brain vaccine.

Dr Rosenow has been generous in supplying us with his streptococcus vaccine for the group of patients treated by his method.

Space does not permit a detailed account of the manner in which the study by the Matheson Commission has been carried out. This has been described in a paper by Dr Inez A. Bentley and myself\*. I may say in a general way that at the beginning of the work control groups were maintained using for the most part a vaccine consisting of normal rabbit brain. Although no one who was giving the vaccines or making the reexamination knew which was the hyperimmune vaccine and which was the control at the end of a year it was decided that the percentage of improvement was much greater in the group receiving the hyperimmune vaccine.

\* Neal J. B. and Bentley I. A. The Treatment of Epidemic Encephalitis. *Arch. Neurol. and Psychiat.* 28: 897, 1932.

For humane reasons it seemed impossible to continue giving these patients the normal rabbit brain vaccine and they were transferred.

The hyperimmune vaccine and more recently the formalized virus has been given to patients in both the acute and chronic stages. It is administered intramuscularly in doses up to 4 c.c. and is given over a period of about eighteen weeks, followed by a rest period of six weeks to two months.

Approximately 28 patients have been treated in the acute stage by the vaccine. The case fatality has been lower than in the control group of patients not receiving vaccine. In general we use the serum for the patients who seem most seriously ill and the vaccine for those in which the attack seems milder. We do not believe that the number of patients treated is sufficiently large for us to draw definite conclusions in regard to the value of the vaccine. However, we are examining at intervals the patients treated in the acute stage with vaccine, serum, or in some instances, serum followed by vaccine, and in time we should have definite information in regard to the effect of early treatment on the development of the chronic stage. So far the results seem encouraging.

We have treated roughly 500 patients in the chronic stage using the rabbit brain vaccines, already described, and Rosenow's streptococcus vaccine. These patients have been under treatment for periods varying from a few months to nearly five years.

Without giving too many details, it may be stated that the group of patients receiving Gay's hyperimmune rabbit brain vaccine has shown a far greater percentage of improvement than has the group receiving Rosenow's vaccine. A small group treated for a year or less with the new formalized virus vaccine has now by far the best record, but too short a time has elapsed to enable us to estimate its value.

A very few patients under both Gay's vaccine and Rosenow's vaccine have shown really remarkable improvement. But we knew that these remissions may occur without treatment of a possibly specific nature.

Rosenow's vaccine may conceivably act in any one of three ways. If the disease is due to the neurotropic *Streptococcus viridans*, it may have a specific action. On the other hand, it may act favorably on any focal infections which are present in

so many of these patients, thereby improving the general health of the patient and lessening a possible toxic effect from the focal infections or the central nervous system. Finally, it may act simply as a foreign protein.

The only statements that can safely be made in regard to the results of treatment of encephalitis with a vaccine against the neurotropic herpes virus are that when used in the chronic stage, the results are distinctly better than when Rosenow's streptococcic vaccine was used. Also that when used in the acute stage, the case fatality seems to be lowered and there is some evidence to indicate that the development of the chronic stage may be averted. The inconclusiveness of any of these statements must be emphasized.

## II. METHODS FOR MODIFYING THE COURSE OF THE DISEASE BY REDUCING INTRACRANIAL PRESSURE.—These consist in:

1. Hypertonic dextrose solution intravenously.
2. Hypertonic iodide solution intravenously.
3. Lumbar puncture.

Beneficial results have been obtained by all these methods in certain cases. The hypertonic dextrose solution certainly is valuable in building up depleted patients and in improving the action of the heart as well as in decreasing intracranial pressure. The action of the iodides is not so definite.

Forced spinal drainage has not been used on a sufficiently large number of patients to warrant any statement as to its value.

## III. METHODS FOR THE CONTROL OF SYMPTOMS.—These include:

- A. Drugs:
  1. Duboisine, scopolamine, stramonium, and atropine.
  2. Bulbocapnine.
  3. Ephedrine sulphate.
  4. Sedatives, hypnotics, and analgesics, such as phenobarbital, bromides, amytal, chloral hydrate, etc.
- B. Endocrine therapy.

The various symptoms for which these drugs are used are too well known to require discussion.

Hyoscine, stramonium, and allied preparations often bring temporary relief in tremor, rigidity, and other manifestations of the parkinsonian syndrome. It has been our experience that patients taking these drugs over a long period have frequently increased the dosage to a point where toxic

effects were obtained. It sometimes happens that cumulative effects result even when the dose is small. Often it has been difficult to persuade the patient to reduce the dose, and sudden withdrawal of the drug is dangerous. That these drugs are habit-forming does not seem to be generally appreciated. We strongly deprecate the routine use of these drugs at clinics where patients are not under close medical supervision.

Atropine preparations have been useful in our experience in controlling sialorrhea, and they have not seemed to be habit-forming. We have not been able to duplicate in our patients the extraordinary improvement that has been reported in this country and abroad by the use of atropine sulphate in gradually increasing doses until 15 to 20 minims of an 0.5 per cent solution is given three times a day.

The use of bulbo-capnine has been largely discontinued because of its toxic effects.

Ephedrine sulphate has been recommended for narcolepsy, but it has not been used in a sufficient number of cases to draw definite conclusions as to its value.

Oculogyric crises have been treated with a measure of success by the atropine group, by intravenous injection of a 10 per cent solution of calcium chloride, by epinephrine, by chloral hydrate, and by paraldehyde. We have not tried all of these measures.

In treating the patients who were immediately under our control we have avoided prescribing drugs of the scopolamine group and have endeavored to persuade those patients who were already taking them to diminish the dose or to eliminate them altogether.

#### IV. METHODS FOR BUILDING OF GENERAL RESISTANCE, HEALTH, AND MORALE. —These consist in:

- A. General hygienic measures, as diet, rest, and proper elimination.
- B. Removal of foci of infection.
- C. Tonics:
  1. Sodium cacodylate.
  2. Iron preparations.
  3. Strychnia.
  4. Other tonics as indicated.
- D. Physical therapy:
  1. Hydrotherapy.
  2. Electrotherapy, including diathermy.
  3. Roentgen treatment.
  4. Massage.
  5. Graduated exercise and reëducation of muscles.
- E. Occupational therapy.
- F. Psychotherapy.

General hygienic measures are of great importance at all stages of the disease, and especially during the acute stage. A prolonged period of complete rest is essential even in seemingly mild cases.

While we do not hold with those who believe that encephalitis is caused by toxins elaborated by focal infections, we do think that patients with encephalitis are adversely affected by these toxins. A special effort has been made to have foci of infection removed or treated.

Sodium cacodylate is highly recommended, especially in the subacute and chronic stages of the disease. It is given in large doses, either subcutaneously or intravenously.

Strychnia have been used with success in asthenic patients.

The value and methods of the more common forms of physical therapy are too well known to require comment. It may be noted that the improvement occasionally following roentgen treatment of the head was stated by von Economo to be due probably to the vasodilator effect of the irradiation and the subsequent hyperemia of the atrophic basal ganglia. A similar effect may be produced by diathermy.

It is most important to combat by every possible means the discouragement that patients suffering from chronic epidemic encephalitis are bound to feel. To this end patients should be urged to interest themselves in suitable forms of occupation, in games, and in other methods of entertainment. Fatigue must always be avoided, but exercise within the limits of their capacity is essential.

Every effort should be made to encourage a spirit of optimism and courage, for the will to recover, or the lack of it, plays no small part in the progress in most cases. This is a practical form of psychotherapy that every physician can use. In certain instances patients suffering from physical symptoms in a large measure due to mental conflicts are reported to have been improved by psychoanalysis or hypnosis.

In closing, I repeat that finding a cure for epidemic encephalitis is one of the most challenging problems that confronts the medical profession. If this is met with optimism and courage, we cannot doubt that medical science will eventually add this disease to the long list over which it has triumphed.

# A FIVE-YEAR CLINICAL STUDY OF THE PROPHYLACTIC VALUE OF ANTIRACHITIC AGENTS

## *An Analysis of 948 Cases*

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This study consists of a critical analysis of 948 cases who received various antirachitic agents over a five-year period. Preliminary reports on this same study were published by us in 1930<sup>1</sup> and 1931,<sup>2</sup> respectively.

**THE PRODUCTS AND THEIR DOSAGE USED IN THE CLINICAL STUDY.**—The infants were divided into eight groups as follows:

1. Those given cod liver oil in liquid form—3 teaspoonfuls daily (8032 U.S.P.X. units of vitamin A and 3,057 A.D.M.A. units of vitamin D)—different cod liver oils used vary somewhat in unitage of vitamins A and D).

2. Those given irradiated ergosterol (viosterol) 100 X, 10 drops, daily (7,300 A.D.M.A. units of vitamin D, no A units).

3. Those given irradiated ergosterol (viosterol) 250 X, 10 drops daily (18,000 A.D.M.A. units of vitamin D, no A units).

4. Those given irradiated ergosterol (viosterol) 500 X, 10 drops daily (36,000 A.D.M.A. units of vitamin D, no A units).

5. Those given cod liver oil concentrate in tablet form, 3 tablets daily (tablets first contained 2,250 A units and 300 D units, those used later contained 6,300 A units and 1,500 D units).

6. Those given cod liver oil concentrate in liquid form, 10 drops a day (7,668 A units and 1,500 A.D.M.A. D units).

7. Those given provitamin A alone in liquid form through the use of carotene, 20 drops daily (3,500 A units).

8. Those given provitamin A and vitamin D—carotene in liquid form mixed with equal parts of ergosterol, 500 D (viosterol), and administered 20 drops daily, *i. e.*, 10 drops of viosterol and 10 drops of carotene (36,000 A.D.M.A. units of vitamin D and 1,750 U.S.P.X. vitamin A units).

In our preliminary reports<sup>1,2</sup> on this study, we showed that as many as ten times the number of D units did not protect the infant as well against rickets when

given in the pure form (viosterol, D alone) as when given in cod liver oil either in liquid or concentrate tablet form. Concluding that rickets are not due to a deficiency of vitamin D alone, but that vitamin A and possibly other factors play an important part in this disease, groups 7 and 8 were added to substantiate these conclusions.

Several good grades of cod liver oil were used. A reputable firm furnished the 100 X, 25 D, and 500 X irradiated ergosterol solutions used. The cod liver oil concentrate in table form is one accepted by the Council on Pharmacy and Chemistry of the American Medical Association. The cod liver oil concentrate in liquid form was prepared for us to use in this clinical experiment. Provitamin A in the form of carotene was furnished by the company which supplied us with the viosterol solutions.

The potencies are given in U.S.P.X. vitamin A units and A.D.M.A. vitamin D units. The U.S.P. Revision Committee is revising the vitamin standards for cod liver oil and the new units which will be known as "U.S.P.X.—Revised 1934" will be identical with the corresponding International units as defined and adapted by the Conference of Vitamin Standard of the Permanent Commission on Biological Standardization of the League of Nations, in June, 1931.

According to the U.S.P. Revision Committee:

One U.S.P.X., Sherman and A.D.M.A. unit of vitamin A equals 1.4 International or new U.S.P.X. 1934 units.

One Steenbäck unit of vitamin D equals 2.7 International or New U.S.P. units or 8.77 A.D.M.A. vitamin D units.

One International or U.S.P. revised 1934 unit of vitamin D equals 3.25 A.D.M.A. units.

**CONDITIONS OF THE STUDY.**—All infants who received a smaller amount or who did not receive the stated amount daily for at



least three months were not included in this study. This necessarily eliminated approximately half of the number of cases studied. All told, some 2,000 cases were critically analyzed. No premature infants were used. It must be borne in mind that all infants in the various groups were started on an antirachitic agent at approximately the same age, gained at the normal rate, and were kept under observation for approximately the same length of time and during the same seasons of the year, also that the series did not include any infants who were gaining extremely rapidly. While various types of feeding were used in all groups, apparently these different methods of feeding had no influence on the results observed. In brief, the infants were all similar in age and dietary treatment and in rate of growth.

**INTERPRETATION OF CLINICAL OBSERVATIONS**—It is conceded that in the interpretation of clinical observations there may be a great variation of opinion as to what constitutes clinical rickets. Whenever there was any doubt in interpretation, the case was eliminated. The final examinations were made by at least two well trained physicians independently of each other, and their observations were charted.

The so called physiological beading so frequently referred to in the literature occurring in early infancy was enough to cause elimination of the infant. The congenital and presumably physiologic craniotabes occurring in early infancy and stressed by many authors was excluded. Many of our cases developed craniotabes approximately between the third and fifth month and cleared spontaneously showing no other rachitic manifestation. These cases are not considered as rickets.

As clinical evidence of rickets, we included marked occipital craniotabes, moderate and marked costochondral beading, grove and flaring of the ribs, epiphyseal enlargement, bowing and spasmophilia. Unless two of these manifestations existed at the same time, however, the case was not considered as having clinical rickets. Again, as all of these infants were under observation for at least three months or more, the final examination was made necessarily at an age at which so called physiologic beading and craniotabes would not be present.

A larger incidence of bowing is seen in some groups by virtue of their having been observed over a longer length of time.

A general statement can be made that from 25 to 30 per cent of infants not receiving antirachitic agents develop clinical rickets. In 469 babies under one year of age, Wilson found that 121, or nearly 25 per cent, developed clinical rickets when no antirachitic agent was given. Moore and Dennis,<sup>6</sup> in 120 cases found 28 (about 23 per cent) to be unprotected. May Wilson, Barenberg, and Bloomberg,<sup>3</sup> De Buys and others found an even higher incidence of unprotected cases. The incidence of rickets in infants not receiving antirachitic agent is but slightly higher than that in our group of infants who received viosterol.

No harmful effects or symptoms or signs of hypercalcemia were noted in any of the cases.

Calcium and phosphorus blood determination were not made except in a few cases because of the refusal of the parents to permit the withdrawal of blood. However, as Hess<sup>4</sup> pointed out, the level of inorganic phosphate in the blood is not as infallible a criterion of rickets as heretofore believed. He states that the fact that the cure of rickets is independent of the concentration of the phosphate in the blood, indicates that variation of this constituent cannot be regarded as an essential or inherent feature in the pathogenesis of the healing of this disorder. He also emphasized the fact that the product of calcium times the phosphorus concentration in the blood is not a reliable indicator as to whether or not active rickets are present.

The prophylactic dosage of antirachitic substances seems fairly well established for cod liver oil at from 1,500 to 2,000 A D M A rat units daily of vitamin D.<sup>10</sup> However, as has been shown by us<sup>12</sup> and others<sup>11</sup> when vitamin D is given in other forms it requires up to ten times the dosage of vitamin D expressed in rat units to approach the prophylactic antirachitic results obtained by the use of cod liver oil. Barnes,<sup>12</sup> in 1933, tested clinically a corn emulsion of cod liver oil concentrate, giving from 4,000 to 12,000 A D M A units of vitamin D and 1,000 to 3,000 U S P X vitamin A units daily. He showed that healing was very rapid in all cases which was borne out by the return of the blood

calcium and phosphorus to normal in two weeks or less and a rapid increase in the strength and activity of the child. Roentgenograms show rapid calcification.

#### SUMMARY OF FINDINGS

1. Cod liver oil in liquid form in a dosage of three teaspoonfuls a day (3,057-6,642 A.D.M.A. units of vitamin D and 8032-13,290 U. S. P. X. vitamin A units) prevented rickets in 97 per cent of one hundred cases studied.
2. Viosterol 100 X given in 10-drop daily doses (7,300 A.D.M.A. units of vitamin D, no A Units) prevented rickets in 77 per cent of the 123 cases studied.
3. Viosterol, 250 X given in 10-drop daily doses (18,000 units of vitamin D, no A units), prevented rickets in 81.5 of the 128 cases studied.
4. Viosterol 500 X given in 10-drop daily doses (36,000 units of vitamin D, no A units) prevented rickets in 76.8 per cent of the 156 cases studied.
5. Cod liver oil concentrate in tablet form given in doses of 3 tablets daily (1,500 A.D.M.A. units of vitamin D and 6,300 U.S.P.X. vitamin A units) prevented rickets in 92 per cent of the 142 cases studied.
6. Cod liver oil concentrate in liquid form, 10 drops daily (7,668 A units and 1,500 D units) prevented rickets in 78.5 per cent of the 99 cases studied. We cannot explain why cod liver oil concentrate in tablet form gave almost the same degree of protection as cod liver oil while the concentrate in oil solution (made by the same concern that made the tablet concentrate) did not. Possibly this is due to a lack of stability of the vitamins in the oil solution.
7. Provitamin A in the form of liquid carotene given in 20-drop daily doses (3,500 A units) prevented rickets in 79.5 per cent of the 99 cases studied.
8. Viosterol 500 X and vitamin A in the form of liquid carotene (36,000 A.D.M.A. units of vitamin D and 1,750 U.S.P.X. vitamin A units) given in 10-drop daily doses of each prevented rickets in 87.5 per cent of the 101 cases studied.

#### CONCLUSIONS

1. Cod liver oil in liquid form—three teaspoonfuls daily (8,032 to 13,000 U.S.P.X. units of vitamin A and 3,057 A.D.M.A.

vitamin D units—gives almost complete protection against rickets.

2. Cod liver oil concentrate in tablet form—3 tablets a day (6,300 U.S.P.X. units of vitamin A and 1,500 A.D.M.A. vitamin D units—gives almost the same degree of protection.

3. Viosterol in 100 X, 250 X and 500 X (7,300 to 36,000 vitamin D units, no A units) gives only slight protection.

4. Carotene (3,500 A units, no D units) does not give protection.

5. The addition of carotene to 500 X viosterol (36,000 D units and 1,750 A units) gives almost 90 per cent protection. It is significant that the addition of provitamin A decidedly increases the degree of protection.

6. We are yet of the opinion that rickets are not due to a deficiency of vitamin D alone, but that vitamin A is an important factor in this disease. Because of the fact that even ten times as many D units in the form of viosterol do not give the same protection as cod liver oil, it is fair to assume that the D factors in viosterol and cod liver oil are not identical.

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12 EAST 11TH STREET

## BONE TUMORS AND ALLIED CONDITIONS

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In order to understand the formation, location, and development of bone tumors, it is necessary to refer to the embryological development of bone. All the elements of bone, fibrous, cartilaginous, and osseous, are derived from a primitive connective tissue. In the skull this connective tissue undergoes a direct transition into bone (membranous bone formation). In the other bones the transition is from connective tissue to cartilage to bone, that is, calcification occurs in the adult cartilage cells to form the finished bone. In the long bones, in the early stages of their formation, a portion of the cortex is formed by a direct transition from the connective tissue of the primitive periosteum into bone.

A condition not unlike the above is found in the repair processes in bone, as anyone of the transition stages may be seen, and frequently, where one type of cells, young connective tissue or young cartilage cell preponderates, the condition may be confused histologically with a tumor growth.

A misconception exists about adult bone, namely, that it is a fixed product undergoing little or no change under ordinary conditions and that its chief function is a structural one. On the contrary, bone is a very active structure differing from connective tissue and other tissues in its stability, due to the calcareous matrix. This stored-up calcium, however, is drawn upon or augmented by conditions in the body in which calcium is metabolized for bodily needs. The control of this calcium metabolism is probably under the influence of the parathyroids and is drawn upon or increased in the bones by these glands by a mechanism as yet not definitely understood. This is perhaps best seen in pathological conditions in the parathyroids, especially tumors with hyperparathyroidism and a progressive decalcification of the bones. Aside from these essentially pathological conditions the normal bone is constantly undergoing changes not easily demonstrated, in which the calcium supply to the body is kept at a normal level.

The medullary portion of bone, the bone

marrow, is also an active organ, among its functions being blood formation including the red cell, the white cell, and the platelets, and diseases of this structure affect the growth and character of the cortical bone in easily demonstrable ways (erythroblastic anemia).

There is also a definite predisposition to bone tumor formation in the growing bone, which results from the growth changes in the young cartilage cell especially where the process of calcification is more complicated or delayed in its development.

Geschickter and Copeland<sup>1</sup> state: "It is delayed developmental steps in the primitive connective tissue of the skeleton and in conjunction with subsequent histogenic steps, after the cartilage has been formed, that practically all primary bone tumors occur." Their publication is worthy of careful study by anyone interested in the study of bone tumors.

That bone tumors arise in the embryological tissue which precedes normal bone is, the author believes, indisputable. Just how and just what produces these alterations or reversions in growths is not so easily stated.

### CLASSIFICATION OF BONE TUMORS

Many classifications of bone tumors exist based upon histological, clinical, radiographic, or other methods. All are incomplete and necessarily so since there is much about normal as well as pathological bone which is not as yet completely understood.

### CLASSIFICATION OF BONE TUMORS—AMERICAN COLLEGE OF SURGEONS

- I. Metastatic.
- II. Periosteal fibrosarcoma.
- III. Osteogenic tumors.
  - A. Benign.
    1. Exostosis
    2. Osteoma.
    3. Chondroma.
    4. Fibroma.
  - B. Malignant (sarcoma).
    1. Anatomic types.
      - a. Medullary and subperiosteal.
      - b. Periosteal.
      - c. Sclerosing.
      - d. Telangiectatic.
    2. Undifferentiated sarcoma.

## IV. Inflammatory conditions simulating tumors.

1. Osteoperiostitis—traumatic, syphilitic, infectious.
2. Osteitis fibrosa.

## V. Giant cell tumor.

## VI. Angioma.

1. Benign.
2. Malignant (angiosarcoma).

## VII. Ewing's tumor.

## VIII. Myeloma.

Geschickter and Copeland (loc. cit.) give the following classification:

## I. Tumors related to osteogenesis.

## A. Tumors derived from precartilaginous connective tissue.

1. Osteochondroma or benign exostosis.
2. Chondroma or benign chondromyxoma.
3. Primary chondromyxosarcoma.
4. Secondary chondromyxosarcoma.
5. Osteoblastic osteogenic sarcoma.

## B. Tumors related to subsequent cartilaginous growth.

1. Chondroblastic sarcoma.
2. Osteolytic osteogenic sarcoma.
3. Bone cyst and osteitis fibrosa.
4. Benign giant cell tumor.

## II. Tumors of non-osseous origin.

1. Primary lymphoma of bone (endothelial myeloma of Ewing).
2. Multiple myeloma.
3. Metastatic carcinoma.
4. Fibrosarcoma and neurogenic sarcoma.

Clinically they may be classified as benign, malignant, doubtful. In the first two the diagnosis clinically easily separates them into definite categories. In the last group, many differences of opinion may occur, and this will be referred to later in the remarks under diagnosis.

From the x-ray standpoint, a classification based upon the findings in the radiograph gives a classification based upon these findings. The essential facts to be noted are:

1. Location—periosteal, cortical, or medullary, involvement of the epiphysis or diaphysis.
2. Bone-productive, bone-destructive, bone atrophy, sclerosing or eroding tumors.  
Bone-invading, not bone-invading.  
Bone-expansive tumors.
3. Number of bone growths—solitary or multiple.

From these findings various classifications and deductions have been made and the varying x-ray changes are of the greatest diagnostic value, since the varying changes produced in the bone are indicative of the character of the tumor.

## ETIOLOGY

In the osteochondromas, hereditary or congenital causes play an important part due to the variation in the periosteal apertures through which bony protuberances arise normally. Inflammation plays a part in the irritation of the cartilage cells normally present in the attachment of tendons to bone.

Injury may play a part in disturbing the normal balance in bone formation and perhaps produce changes in the osteogenic zones, especially changes in the rate of proliferation in the adjacent precartilaginous tissue which disturbance may lead to tumor formation. The relation of injury to bone tumor formation is worthy of careful analysis and the relation of the trauma, in time, to the appearance of the growth should be carefully noted. An indefinite history of trauma can nearly always be elicited and the comparison of the changes which have already taken place in the bone at the time it is examined may be entirely too remote or the changes may be too great to be given any weight in the given case. This point is of special importance since the Industrial Legislation, under the Workmen's Compensation Act, will require medical opinion as to the relation of the given trauma to bone tumor formation in specific instances, and a careless analysis of the trauma in its relation to the bone growth and its development and character as related to the injury in question may lead to grave errors either way. That trauma plays some part in the formation of bone tumors cannot be specifically denied, yet it can scarcely be conceded that a single definite trauma is the essential cause of the tumor formation. Slight injuries produce fractures in bones already the seat of disease *i.e.*, pathological fractures, but the tumor itself antedates such trauma and is not the cause of that tumor.

## GENERAL CLINICAL FEATURES:

*Age:* Bone cysts occur most commonly before the twentieth year.  
Giant cell tumor between twenty and thirty, as a variation may rarely occur at any age.  
There is no common age for the periosteal and central sarcoma, but as a rule they occur in young individuals.  
Metastatic tumors occur in middle to old age.  
Myeloma occurs in adult life and is rare in the young.  
Ewing's tumor—diffuse endothelioma of bone—occurs before twenty-five in the vast majority of cases.

**Pain** Benign Onset insidious, a variable factor and dependent on the formation of bursa, pressure on adjacent structures, or injuries to the tumor

Malignant Onset more definite, pain more marked and is more marked in the patient's story. It is more persistent, does not disappear with rest, is increased by use. Occasionally it may be very acute with fever, sweats and leukocytosis and run an acute course

**Duration** Benign Long course, trouble exists for months or years

Malignant Short course, patient dates trouble in weeks

**Character of Growth** Benign Slow, swelling increases gradually over a long period. Swelling usually precedes pain, no rapid swelling

Malignant Sudden appearance of swelling which increases more or less rapidly. Pain precedes swelling and increases with swelling

**Disability** Benign Usually slight, some interference with joint function some lameness after use which subsides with rest

Malignant Slight at first but increases rapidly with distinct lameness, both increased by use. Does not disappear after rest

Spontaneous fracture is common and Blood good considers it diagnostic in bone cysts. Occurs as a late result of malignant growths in bone

**Skin Changes** Glossiness of the skin enlargement of the superficial vessels pulsation of the tumor are late symptoms. Likewise, cough, chest involvement, and metastasis are late results

## DIAGNOSIS

In the diagnosis of any bone tumor certain general rules of procedure are of value. Pain in the course of a long bone or any unexplainable pain in any region of the skeleton should be examined by the x-ray and the findings thus obtained studied in conjunction with the other clinical findings by the roentgenologist and the clinician

Every malignant tumor of bone and every doubtful tumor should have an x-ray examination of the chest. Evidences of lung involvement will have a very definite effect upon our clinical procedure in the handling of the given case. X-ray examination of the chest is also a necessary procedure in the follow-up of malignant bone disease

Every patient with a bone tumor should have a Wassermann or similar blood test. In doubtful cases Bloodgood believes a therapeutic test by salvarsan and the iodides is indicated. A complete blood count should be made and will aid in elim-

inating blood dyscrasias. A polymorphonuclear leukocytosis occurs in rapidly growing malignant sarcomas, but it is never as marked or as characteristic as that of an acute osteomyelitis

In the general physical examination the location of the tumor or tumors, whether single or multiple, certain changes in the shape of the bone, differences in feel, bone tenderness changes in the skin circulation should be noted and help in comparison in arriving at a diagnosis

General diffuse enlargement of a bone which is hard usually means chronic inflammation rather than tumor

In discussing the various types of bone tumors, I shall follow no definite classification but will try to present the types in some relationship to their source and the character of the tissue involved. Much which is interesting must, because of the scope of this paper, be omitted. All that is stated is derived from sifting the literature and from personal experience and is, in so far as is possible, an attempt at an accurate presentation of our present knowledge. Such defects as exist must be acknowledged as a personal deficiency or misconception on the part of the writer

**OSTEOCHONDROMA**—This represents an imbalance in the permanent bone formation in the osteogenic zones of the periosteum and the proliferation in the adjacent precartilaginous tissue

The exostoses of inflammatory origin result from an overstimulation of the center of cartilaginous cells in the attachment of the tendon (Kolliker) and resemble tumor formation so closely that they are not distinguishable histologically

**Etiology**—May occur from many causes

Congenital Multiple, hereditary—due to congenital variations where bony protuberances normally occur

**Traumatism**—Cause single exostoses, especially at the site of normal bone protuberances

**Infection**—Localizing in tendon attachments, produce spurs (exostoses) as in the

in motion, pressure on contiguous structures, or the formation of bursae over the growth. Fracture of osteoma may occur and be the earliest symptom

**Location**—Periarticular and in tendon attachments

*Treatment.*—Removal in cases giving symptoms, careful to reflect periosteum, excise tumor at pedicle and excise involved tendon and reattach same.

*Complications.*—Malignant degeneration, 7 per cent in Geschickter and Copeland cases.

Closely associated with this group are the multiple exostoses and the deforming types of chondrodysplasia.

**CHONDROMAS AND CHONDROMYXOMAS.**—Benign tumors occurring in small bones of hand, feet, ribs, and spine between the ages of twenty and thirty.

*Central Location.*—Those in small bones are usually benign and those of the sternum and vertebrae should be regarded as potentially malignant.

*Etiology.*—Congenital in origin and represent supernumerary joint cartilages.

*Symptoms.*—Swelling, especially in small bones of fingers, rarely pain after use, readily diagnosed by the x-ray.

*Treatment.*—Excision and cauterization, care not to transplant any of the cartilage cells.

**PRIMARY CHONDROMYXOMA SARCOMA.**—Young individuals under thirty; very malignant; arise in the periosteum, related to periarticular structures about the knee, shoulder, and pelvic girdle; they run a rapid clinical course with a fatal outcome. X-ray features are visible as a subperiosteal shadow which does not involve the cortex until late. Geschickter and Copeland give the cures as about 5 per cent.

**SECONDARY CHONDROMYXOSARCOMA.**—Usually result from malignant degeneration of benign osteochondroma, or occur as complications of Paget's disease or the hereditary types; usually involve the upper end of the humerus, ribs, or heel.

*Symptoms.*—There is usually a long history of pain of a rheumatic type followed by an exacerbation of this pain and in the humerus with a pathological fracture. X-ray examination may show the existence of the preceding condition with a fuzzy infiltration and destruction of the cortical bone and involvement of the medullary cavity.

*Treatment.*—Radical resection or amputation followed by implanting of radium or radium pack. 'Bloodgood' called these tumors myxoma and called attention to the frequency with which they recur and to the chronicity of their course. A cure

may be obtained in 20 to 25 per cent of the cases.

**PERIOSTEAL OSTEOGENIC SARCOMA (Sclerosing Osteogenic Sarcoma).**—These tumors occur in very young individuals (maximum age about fifteen years); they are located near the ends of the long bones, appear suddenly, grow rapidly, and show the characteristic x-ray appearance, namely, delicate radiating lines of new bone beneath the periosteum (sun ray tumor) without involvement of the periosteum.

*Treatment.*—Very early radical resection or amputation is the method of choice. Postoperative radiation and Coley's toxins may be of benefit. Metastasis to the lungs occur early and an x-ray of the chest is necessary at the time of examination.

*Prognosis.*—Poor.

**CHONDROBLASTIC SARCOMA.**—Arises from the young cartilage cells of the epiphyseal lines and occurs during the period of active bone formation, usually about puberty; it involves the actively growing ends of the long bones, especially the femur and tibia.

*Symptoms.*—Sudden onset of pain, fever, and leukocytosis, with early local tenderness over the involved bone are common symptoms and may resemble an acute bone infection. The x-ray examination while not characteristic is sufficiently so to make the diagnosis especially in the classical case. The tumor extends on both sides of the epiphyseal line, involves the shaft, and shows a periosteal shadow, that is, it shows evidences of central bone destruction with periosteal irritation.

*Treatment.*—Early amputation, followed by radium or deep roentgen therapy and Coley's toxins is advised.

*Prognosis.*—The probability of a cure is very poor.

**OSTEOLYTIC SARCOMA.**—So-called angiosarcoma, aneurysm of bone, malignant bone cyst; occurs at any age. It is most prevalent in the long bones, involves the central portion of the bone, is rapidly bone-destructive, and pathological fracture is common. In the younger age groups fever and leukocytosis are common. A peculiarity of the advanced tumor is the suggestion of fluctuation and pulsation. X-ray diagnosis is difficult and often it is confused with bone cysts, giant cell tumor, or Ewing's tumor, or in the younger group with osteomyelitis. The single feature of

value is the irregular destruction of the cortical bone by a central tumor, whose outlines are not clearly defined, with early periosteal reaction and an absence or very slight expansion of the cortical bone. The histological picture shows a marked degree of anaplasia in spindle cells and osteoclasts with marked vascularity. Geschickter considers that this tumor represents an early phase of osteogenesis by way of fibrous tissue and arises from the endosteum. X-ray examination of the lungs is essential as metastases occur early.

**Treatment**—Early amputation offers the best result but is only successful in the older patients (6 per cent five-year cures—Geschickter). Death results in the younger patients no matter what treatment is used. Following amputation, radiation and Coley's toxins may be used.

**BONE CYSTS**—Bone cysts occur in young individuals in the diaphysis of the long bones near the metaphysis and are most commonly found in the upper part of the femur and upper part of the humerus. They run a chronic course and the symptoms may be indefinite. Pathological fracture is frequent and, as Bloodgood has stated, is almost pathognomonic of the lesion.

Pain is not a constant finding, often it is worse after exercise. Swelling of the bones and local tenderness are present but may be entirely absent.

X-ray examination reveals the lesion and makes the diagnosis, namely, a cystic cavity in the bone of a young individual, which is sharply defined. The cortex is thinned and expanded, but there is no periosteal change.

The cyst usually contains a currant-jelly like substance, and it is lined by a fibrous lining made up of spindle cells and fibroblasts. Many variations may exist, but in none of the lesions is any bone destructive process present.

**Treatment**—The treatment is largely symptomatic. Pathological fractures heal and cure the condition. The present tendency is to leave the solitary cyst alone unless it is progressing.

Personally, I prefer a simple operation which removes the fibrous tissue, crushes the cyst wall, and in fact does what the fracture does, that is, heals the bone.

**OSTEITIS FIBROSA**—Osteitis fibrosa, osteitis fibrosa cystica, and its variants including multiple osteitis fibrosa include a

number of conditions and the name is a pathological dumping ground.

Solitary bone cysts are grouped by some writers as a variety of this lesion in young individuals. In some cases with bone destruction and giant cell formation they are considered variants of the giant cell tumor.

In the polycystic form of osteitis fibrosa the lesion is more rapid in its development than the solitary cyst, its course is relatively more rapid, the symptoms are more definite, and the process is located nearer the epiphysis.

In the x ray the lesion is more trabeculated, it seems to be made up of more than one cavity and the outline, while smooth, is not as regular as the single cyst, but is lobulated. In other variations polycystic disease of the bones occurs in such diseases as osteomalacia, in Paget's disease, and in conditions in which the parathyroid plays either the main part or at least a definite secondary one.

The histology of the polycystic group shows giant cells which are less frequent and not so large as in the giant cell tumor. There is also more fibroblastic tissue with more intercellular substance, and trabeculae of bone running through the tissue are more common than is the case with giant cell tumor.

I am not convinced that we have as yet differentiated these pathological processes. Since the essential pathological feature is one of repair, isolated forms of osteitis fibrosa may be, and I believe the following cases illustrate their relation to definite infection, typhoid fever in these cases. What the original infection produced is a question. The late result is shown by these slides.

**HISTORIES** William F. aged 21, was admitted to the New York Hospital with an acute appendicitis was operated upon and a gangrenous appendix was removed. During his convalescence he called attention to a swelling on his left radius which he had noticed for some months. It did not bother him except that it was larger than the bone in the other arm. Three years previous to his present illness he had typhoid fever in Roosevelt Hospital but does not remember any trouble with his arm at that time. Examination revealed a swelling over the lower third of the radius which was not tender. X ray showed a cystic cavity in the bone which was definitely outlined and which showed some evidence of production in the periosteum or thickening of the cortex around the cystic cavity. At operation a cystic cavity in the bone with material not unlike that found in a bone cyst was found. There was more detritus than is customary. It

was emptied, cauterized, the wall crushed, and the wound closed. A culture was reported as containing a pure culture of *B. typhosus*. His recovery was uninterrupted, the bone healed, and he had no recurrence up to ten years after the operation.

The next slide is one of the right shoulder in C.M., aged 25, who states that six years ago while playing basket ball he injured his right shoulder. Pain in this shoulder was intermittent in type, but disappeared under salicylates and physiotherapy. Three and one-half years ago he had had typhoid fever with an extensive phlebitis of the axillary veins. This case is reported in detail in the *Annals of Surgery*, April 1917, under the diagnosis of hemangionia cavernosum of bone. At the time of the operation, I considered it a possible result of typhoid. The cultures were negative. Dr. Elser stated in his pathological report "we are led to regard it as cavernoma in bone with organization of extravasated blood." Later Bloodgood, in a personal communication, after reviewing the case considered it a form of osteitis fibrosa cystica. A second operation two years later for an increasing difficulty in motion at the shoulder showed no evidence of a recurrence of the previous condition; however, there was a bone spur which had formed in the region of the operation and which caused restriction in motion due to mechanical causes. Just where to place this condition is questionable, but I still have the impression that it is in some way related to the extensive thrombophlebitis during his typhoid fever.

The third case is one in a man aged 51, who at the age of 38 had had a complicated typhoid fever. During the summer of 1926, after a blow received on that arm, some swelling of the radius and a prominence of the head of the ulna where noted. Gradually this deformity increased with a dull aching pain in the arm. An x-ray picture showed an irregular decalcification of the lower half of the radius with thickening of the entire shaft, an increased length of the radius with deformity of the bone, and an extensive alteration at the carpal articulation of the radius due to this overgrowth. The head of the ulna was displaced posteriorly. Dr. C. L. Gibson operated upon the arm in December, 1926, and found a cortical bone which was irregularly hard and soft with the medullary space replaced by a reddish gray material which was irregularly distributed among rather friable bone trabeculae. The pathological report was osteitis fibrosa. The culture was negative. Subsequent x-ray pictures of the skeleton and blood calcium and phosphorus examinations showed no evidence of involvement of the calcium metabolism, and none has occurred in the eight years following the discovery of the condition\*.

Just where to place this condition and how to explain it is a question. I feel that it is in some way related to the typhoid fever.

In the diffuse and multiple forms the parathyroid and disturbed calcium meta-

bolism will explain their origin, especially if tumors of the parathyroid exist.

In any case of osteitis fibrosa cystica the blood calcium and blood phosphorus should be estimated. These may be normal. The calcium output as compared to the intake should then be computed and if the output is increased over the intake a systemic condition must be suspected and sought for. Local lesions in a single bone do not, in my experience, produce calcium changes of importance and the systemic calcium is not altered.

In the treatment of osteitis fibrosa, x-ray therapy is given precedence, largely, I believe, because it does no harm and relieves the bone pain. Diet is also given an important place, especially a diet rich in calcium, phosphorus, and vitamin D.

In cases with a distinct increase in the calcium output parathyroid tumors should be suspected and the parathyroids should be investigated surgically.

In the localized forms of osteitis fibrosa confined to a single bone there is a place also for radical resection of the deformed bone and, in selected cases, its replacement by a bone graft with overgrowth deformities. As yet it has not been given a sufficient trial to determine its value or lack of value.

**GIANT CELL TUMOR.**—This tumor occurs in adults and is situated near the epiphyseal line. It is most common at the site of active bone growth, *i.e.*, at the lower end of the femur, upper end of the tibia, and the lower end of the radius.

Trauma is a more definite entity in the history of this tumor. Barrie<sup>7</sup> considered it a type of osteomyelitis and gave it the name of "hemorrhagic osteomyelitis," with infection as a possible cause, and with the resultant changes in the bone producing the tumor after the infection had disappeared. The important factor is to omit the name sarcoma in relation to the nomenclature of this tumor.

**Symptoms.**—Pain is a more or less constant factor and usually follows some trauma, which is important in the patient's mind. The pain is not acute but is a gnawing aching pain and made worse by use of the extremity. Swelling is noted early, the ache and pain being associated with the swelling.

In a patient in the third decade with a tumor in the customary region, which involves the bone which is hard in character,

\* The author is indebted to Doctor Gibson for the report of this case.



the x-ray will readily make the diagnosis. It will show a circumscribed lesion with evidences of cortical bone destruction at or near the epiphyseal line without periosteal reaction and with definite expansion of the bone. The shadow is irregularly hazy, the cortex is rapidly thinned out, and perforation of the cortex is frequent. The joint cartilage is seldom perforated and joint involvement is rare.

*Pathological Appearance.*—The tumor mass is quite vascular and bleeds readily, it is of a reddish brown or grayish brown color and is quite friable and may have definite fibrous tissue strands in or about it. On the shaft side the bone is firmer and harder than the normal bone. The bone over the tumor varies in thickness.

*Microscopic Appearance.*—The tissue consists of a mass of multinucleated giant cells in a varying mass of smaller round or irregular shaped spindle cells. Giant cells are more numerous about areas of hemorrhage or bone spicules.

*Complications.*—Recurrences occur if the tumor tissue is incompletely removed. Local recurrences are relatively more cellular than the original but preserve the typical appearance. Reports of tumors of the typical giant cell type which have metastasized appear in the literature, and the nature of the original tumor is a debatable one. The metastases from these tumors, however, are osteogenic sarcoma and do not show the typical giant cell structure.

*Treatment.*—Conservative treatment is indicated and amputation is, at the present time, never indicated. Curettement with cauterization as recommended by Bloodgood has given good results in the properly selected cases. Recurrences have been more frequent when this has been incomplete or has not been followed by cauterization. When the cavity is unusually large or the soft parts cannot be properly allowed to fall into the cavity, a muscle flap to fill the bone defect will hasten the repair process. Wide open drainage, especially with gauze packing, is not advisable as infection is prone to occur and leaves a long-standing drainage wound, often necessitating secondary operation to close the wound. When packing is required, I prefer the vaselin gauze pack as recommended by Orr in the treatment of osteomyelitis, and leave it alone until it is practically forced out of the wound by the growing tissue behind it.

Radical resection of the bone may be used in selected cases, especially in the radius, fibula, and ulna and the removed bone replaced by a suitable bone graft. In my hands 5 cases—3 radius, one ulna and one fibula, have given 4 excellent results, with one partial failure in a case of the radius due to the fracture of the graft produced by a too earnest examination elsewhere, to see if the graft was solid. There were no prolonged disabilities except in the last-mentioned case.

*Roentgen and Radium Therapy.*—Early cases and more advanced cases have been treated throughout by this form of therapy with successful results. Under treatment the bone tumor apparently increases in size until the cortex ruptures and then retrogresses and heals. The implantation of radium as a part treatment in curettement is not advisable because of the delay in healing produced by the action of the radium. The selection of the type of treatment to be used must be left to the surgeon. In any case where doubt exists preliminary radiation can be used until consultation determines the best procedure for the given case. Ill-advised operations or amputations are not necessary at the present time and nothing is gained by a hasty operation.

*Ewing's SARCOMA.*—Ewing<sup>4</sup> described a tumor of bone which occurred in young individuals usually under 25, which probably arises from the endothelium.

*Etiology.*—The etiology is uncertain. Trauma is indefinite but is usually given as the beginning of the trouble; however, careful analysis of my cases shows that either the lesion was present before the trauma or was so remote that its relation to the onset of the tumor is open to very justifiable skepticism.

*Symptoms.*—Pain is a constant finding. It varies extremely in character but is usually dull aching "rheumatic" in character, sometimes with shooting pains located over a long bone. It is increased by use, and rest does not cause it to disappear completely. At first the pain may be intermittent, but later it becomes constant with variations in degree. Pain at night is among the constant features and often it is stated to be more severe then. Swelling or tumor may be the first symptom, but usually it is preceded by pain. The swelling is variable in size, usually diffuse in relation to the contour of the

bone, and associated with deep tenderness over the swelling. Occasionally the overlying tissues may be edematous. Later, changes occur with local heat and increased size of the skin veins. Change in the size and extent of the tumor also may occur with evident regression of the tumor.

Pathological fracture is relatively rare but does occur; in one of my cases it was an early symptom.

An increase in the body temperature is common.

Blood examination is variable but an early leukocytosis, especially in cases with fever, is common, with an occasional increase in the eosinophiles. The hemoglobin and red cells may show the picture of a slight secondary anemia.

*Urine Examination.*—Cases with temperature may show a trace of albumin in the urine and other indications of kidney irritation. Bence Jones bodies are not found.

*Complications.*—Metastases occur late and are usually diffuse. They involve the lungs, other bones than those involved, especially the skull and vertebrae. With the involvement of these structures, neurologic complications and motor disturbances occur.

*Diagnosis.*—In a young individual about twenty with indefinite bone pain and the symptoms above described the x-ray is essential for diagnosis. The tumor is usually located in the diaphysis of a long bone, rarely involves the epiphysis, shows a hazy, shaggy shadow with the so-called "onion peel" reaction of the periosteum with thickening of the bone. There is an increased density of the bone, especially in the medullary portions, and the tumor seemingly extends in the long axis of the bone.

In the early stages bone production is more common. Later, bone destruction occurs and the rapidity of this process determines the appearance of a pathological fracture.

*Differential Diagnosis.*—Inflammatory diseases of the bone, pyogenic, tuberculous, and syphilitic, must be distinguished, but a careful study should separate these especially if the various clinical tests are made. As Bloodgood has stated, a therapeutic test in doubtful cases in which syphilis is suspected is valuable.

Multiple myeloma and osteogenic sarcoma may be confused with Ewing's tumor.

In multiple myeloma the lesion is multiple, or, if single, the periosteal reaction is not as marked and early pathological fracture is common. The x-ray examination of the skull will help as it is not involved in early cases of Ewing's tumor. Bence Jones bodies are also frequent in the urine.

Osteogenic sarcoma is located at the end of the bone near the diaphyseal line. Ewing's tumor is in the shaft and rarely extends to this region. Osteogenic tumor is more destructive in appearance and the laminated periosteal bone is rarely seen.

Metastatic tumors produce more bone destruction and if suspected from the x-ray appearance, and since they occur in later life, usually show the site of the original tumor on careful x-ray aid clinical investigation, and lead to the proper diagnosis. Hypernephroma will give characteristic urinary findings, especially if sought for, and a palpable kidney will be suggestive.

*Pathology.*—The microscopic appearance of Ewing's tumor is characteristic. The constant cell is a small more or less polyhedral cell with a round or oval deeply staining nucleus. The cell cytoplasm is scanty and does not stain. Mitotic figures are common. Where these cells are involving the bone, various stages of bone reaction, fibroblasts, osteoblasts, and osteoclasts may be seen, with bone formation and bone destruction progressing in varying areas.

*Treatment.*—Radiation of the tumor is the method of choice and may produce a cure in selected cases. When the tumor retrogresses or is held stationary, surgery is indicated, but sufficient time is usually given to consult as to the best surgical procedure for the given case.

Radical resection of the involved bone with the contiguous muscle attachments is the method of choice surgically, in my opinion, and should be done when retrogression is established, that is, it should always be preceded by proper satisfactory radiation. The removed bone should be replaced by a suitable bone graft and muscle attachments reattached to the grafted bone. Personally, I feel that this method has not been given a sufficiently thorough trial to determine its efficacy, and I believe it can be resorted to earlier and more frequently when its nondisabling features are compared to that of amputation

*Amputation.*—Amputation should not be resorted to without preliminary radiation. Just where amputation belongs in the treatment of this condition, is open to speculation. Radiation after amputation is always advised.

*Prognosis.*—The prognosis is better in the cases of long duration, in the cases which respond to radiation promptly and in the cases in which the local lesion is excised promptly.

Preliminary operative investigation for biopsy is not indicated, although Geschickter and Copeland think it does not necessarily affect the prognosis.

**MULTIPLE MYELOMA.**—This is a disease of adult life and occurs after forty in the vast majority of cases; it is more common in men (about  $2\frac{1}{2}$  to 1). Little is known about its cause, but possible hereditary tendencies may exist.

*Symptoms.*—Pain is indefinite in character, so-called rheumatic or neuritic type. It is aggravated by use and by pressure, and frequently its recognition is brought about by some unusual physical effort followed by an exacerbation of the pain. It is intermittent in character and may completely disappear. Later it becomes constant and more intense, especially in the involved area. With vertebral involvement, cord lesions, peripheral paralysis, or paraplegias occur.

*Tumor.*—Swelling over a given bone may be the earliest symptom. Later these become multiple and give symptoms depending on their location, such as changes in shape of the spine, interference with mastication, etc.

*Fracture.*—Pathological fracture is frequent and may be the earliest symptom; it is frequent in the ribs and short bones. Multiplicity of the fractures is also a characteristic phenomenon.

Lung involvement, bronchitis, emphysema, and pleurisy are common, the latter when the ribs are involved.

In vertebral disease, compression of the cord or pressure on the nerves will give various types of paraplegia.

*Kidneys.*—Various forms of kidney disturbances are reported. Bence Jones bodies are present in 60 to 70 per cent of the cases and are significant, if not a diagnostic finding.

Gastric disturbances are not infrequent and vomiting may be annoying, especially in cases with cord involvement.

The blood picture is not characteristic. In the differential white count an increase in eosinophiles has been noted. Myelocytes are also reported and abnormal mononuclear types may be found (Turk's irritation phenomenon).

*Diagnosis.*—An x-ray examination of the skeleton is helpful in diagnosis and will show the multiple lesions in the bones. The lesion is central in location, is bone-destructive, and rarifies the bone early. Confluence of contiguous areas is frequent. The tumor cell is of the plasma cell type.

*Treatment.*—The treatment is essentially palliative and symptomatic. Radiation will cause local areas to disappear, but they recur either locally or elsewhere; eventually they become resistant to radiation.

Fractures and other complicating conditions are treated by appropriate measures.

*Prognosis.*—The prognosis is hopeless and no cases are cured.

**METASTATIC TUMORS.**—Various forms of carcinoma (breast, prostate, etc.) metastasize to bone. They may occur early or late and are bone-destructive in character producing early pathological fracture. They may be single or multiple and the symptoms are variable with pain and dysfunction, loss of weight, anemia, early cord symptoms in vertebral involvement, etc. Deep and intense x-ray therapy helps the pain and in isolated cases temporarily arrests the disease. The prognosis is hopeless.

Another rarer type of carcinoma of the bone may occur, namely, that associated with a chronic draining sinus. The following case of epithelioma of the bone, which occurred in the tibia in a sinus of an old osteomyelitis, illustrates this type.

Man, aged 65, had osteomyelitis of the tibia as a child. This was opened and has been discharging for about sixty years. This discharge up to nine months ago was slight and from time to time contained bits of bone which were extruded. About nine months before he was seen by the author there was an increase in the discharge which has gradually become more profuse and had smelling, and recently there has been a tendency for the ulcer (sinus) to bleed. There was a typical epitheliomatous ulcer involving the skin about the sinus which extended into the bone and which in the x-ray showed extensive involvement of the medullary bone. The inguinal nodes were palpable but did not seem larger than the uninvolved side. The chest x-ray was negative. Mid-high amputation was done. Six months after the amputation enlargement of the inguinal nodes occurred and at nine months definite lung involvement took place and death occurred about two months later.

## ARSTACT OF DISCUSSION

DR. PHILIP L. FORSTER, Albany: I think a word or two regarding the use of Coley's toxin may not be amiss. It is my impression that it is either not used at all because some men feel opposed to it, though without any definite reasons for their opposition, or else it is used more or less indiscriminately, without proper regard for the type of tumor under treatment. It should be understood that Coley's toxin, which is a mixture of the toxins and derivatives from killed cultures of *Streptococcus erysipellatis* and *Bacillus prodigiosus*, is not held forth as a cure in itself. It is used in conjunction with other measures such as irradiation and operation. Its greatest value, according to Dr. Coley, is its use when combined

with thorough irradiation in cases of endothelial myeloma, or Ewing's sarcoma. Also, in cases of osteogenic sarcoma and, to a lesser degree, in multiple myeloma. It is my feeling that Coley's toxin should be used more extensively, always bearing in mind that it is not a curative measure, but merely an aid. Cases recorded indicate, generally, better results with the use of the toxin—and certainly there is nothing to lose by its use.

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126 EAST 37TH STREET

## ARE HOSPITALS TOO HUMANITARIAN?

A successful business man was discussing hospital problems with Dr. Frank J. Walter, Superintendent of St. Luke's Hospital in Denver, and retiring President of the Colorado Hospital Association. He told Dr. Walter that hospital executives stress the humanitarian principle too strongly, and said the hospitals would be much better off if run on the cold maxims of business. What Dr. Walter thinks of that idea he told in an address before the Association.

All recognized ethical hospitals, he remarked, are for the most part alike in equipment and facilities for the care of their cases and in the type of nursing service given to the patients. What is it, then, which makes certain hospitals the most outstanding in the minds of the public? It is the spirit of humanity which is more fully practiced in these hospitals than in the others. These hospitals are the ones which anticipate their communities' needs and present ways of meeting them. These hospitals are able to keep themselves free from political interference both within and without. These hospitals are continually striving to make their communities health-conscious. These hospitals even in this time of business stress and uncertainty are not sacrificing their scientific programs in promoting their economic interests.

Without the spirit of humanity each hospital of the community, or of the nation, would be an independent, self-centered, uncooperative unit; the scientific advancement for the care of the sick would be practically at a standstill. There has developed, in the code of ethics among the professions caring for the sick, an unwritten principle that any discovery which will either aid in therapeutic treatment, or will expedite the administering of such treatment to patients, shall not be withheld or commercialized by the discoverer, but shall be freely given to the medical group so that all may benefit thereby. Without the spirit of human kindness there would not be this willingness of one individual or institution to share this knowledge and experience for the good of the whole. Without it, the common law of courtesy, demanding that one hospital superintendent reciprocate in extending support and kindness to other hospital executives who have performed similar services and courtesies for him, would not be exercised.

The entire system of voluntary hospitalization is built upon the spirit of humanity. Without it this system would collapse. State Medicine would then be a reality, since the private hospital is the only bulwark against it.

## EIGHT-HOUR DAY FOR NURSES

The rapidity with which hospitals are adopting the eight-hour day for special-duty nurses is indicative of the satisfaction this innovation is giving. In greater New York alone, eleven of the larger hospitals have introduced this reform and the *New York Medical Week* reports that it is giving general satisfaction to patients, doctors, and nurses.

The twelve-hour shift is incompatible with the modern trend to a shorter working day. Naturally the latter leaves the nurse fresher and more alert; and the patient's response to this is quick and favorable. Far from resenting the appearance of a third "on the scene, most patients appear to welcome change as a break in the inevitable monotony of hospitalization.

Judiciously handled, the eight-hour day need involve no added expense to the patient or the hospital. The fee of the individual nurse is naturally less and the food allowance is reduced; eight-hour workers are not paid for three meals each. The patient is therefore assured of better nursing service at no greater cost and employment is created for a large number of nurses who have suffered greatly from the enforced idleness of the past few years.

The attitude of physicians toward this innovation reflects the favorable response of patients, and nurses. As long as standards of service are not lowered, the medical profession is glad to cooperate in securing better working conditions for one of its most valued aides.

## Symposium on Gonorrhea

### ON THE TREATMENT OF ACUTE GONORRHEAL URETHRITIS IN THE MALE

ALBERT M. CRANCE, M.D., F.A.C.S.  
*Genoa*

In the words of Pelouze "It is probable that nothing would do more toward the ultimate solution of the treatment of gonorrhea than for us universally to realize that our antiseptics and bactericides do good only in so far as they are able to encourage tissue reaction, and that any direct bactericidal action they may have is incidental and of secondary importance. The result of this attitude would be to stimulate investigation in other directions that offer more chance of real success, and to stop the wild scramble for the ideal chemical germicide that probably is not to be." This same author further states that "the use of certain substances in the urethra is so depleting to the mucous membrane that it not only retards cure but prevents it." This illustrates very well the very basic principle of this paper.

We must all realize that gonorrhea in the male still continues to remain without any definitely specific treatment. There is, however, a specific management of the disease which does result in its satisfactory termination, only, however, when the confidence of the patient and his cooperation are obtained at the very outset of the treatment.

The first important step in any given case is to make positive the diagnosis by smear. This is mentioned only because one is surprised with the frequency with which physicians neglect this procedure. Each year the writer sees several cases which have been placed under treatment for gonorrheal urethritis, but which were not gonorrheal urethritis at all. In fact, the examination consisted of a brief history and the writing of prescriptions, without even inspecting the organ involved. Physicians who treat gonorrhea in this light are just those who profess to say they do not treat it at all, and yet by so doing they are delaying this patient's recovery.

The second important point is to treat the urethritis for the first week or two by internal treatment alone. This should con-

sist of a good salol and santalwood compound capsule (10 minims), taking one or two after meals and two again at bedtime. A diet free from condiments is advisable. Water should not be forced because it produces more frequent micturition and, consequently, invites complications in the posterior urethra.

Third, it is important also to attempt to establish an early temporary immunity by the use of very minute doses of vaccine. In spite of the general objection to the use of gonococcus vaccine, I believe that when this is properly used in minute doses, at least twice a week, sufficient evidence exists to conclude that it does shorten the duration of the infection. The writer has been fortunate enough to have used intradermal injections of a gonococcus bouillon filtrate, such as reported by Corbus of Chicago, in over 100 cases. In a few cases very prompt results were noted, but in the vast majority the duration of the attack lasted about the same as with vaccine. Nevertheless, I should miss the use of some such "booster" treatment in my own practice.

Recently, a new antigen, under the name of Neiso-Lysate has come to our attention. The writer has used it only for a few weeks, but already some very promising results have been noted. Certain workers at the University of Illinois have used it in 174 male patients, and in less than 5 per cent of these no local treatment whatsoever was used. The low incidence of complications in this series was impressive. Doses of 3 minims are given subcutaneously twice a week, increasing the dosage very gradually.

Unquestionably, most of us have often wondered just what is accomplished by local treatment, whether it is a stimulation of the mucous membrane or whether the solution used actually does destroy surface organisms. It is certain that no solution can be expected to reach all of the invading gonococci. Consequently, it seems

that the day is not far off when local treatment, such as the use of 0.25 to 0.5 per cent protargol, 10 to 15 per cent argyrol, and other silver derivatives, will be considered a detriment rather than an asset. Any of these should be used with great precaution, only after the acute symptoms have subsided and when it is not easy to find gonococci in the smear.

After the second week, however, when the acuteness will have somewhat subsided, there are some cases in whom injections can be used to advantage in shortening the duration of the disease. Before advising such treatment, however, proper office instructions as to the care as well as to the proper technic necessary for injections must be emphasized. No patient should ever leave the office with merely verbal instructions as to this technic. Any physician who is not willing to take the time to demonstrate the use of a bulb syringe for urethral treatment, should never prescribe it. More harm can be done by this one element than many of us realize. Such injections should not be used more than twice a day and if each injection is retained less than eight minutes, both syringe and solution might better be discarded in the proverbial ash can.

In those cases requiring office irrigation the writer believes that it will best be accomplished by the use of a bulb syringe and some mild astringent solution, such as neutral acriflavine, potassium permanganate, or their equivalent. Before leaving the subject of local treatment, may I say that we are passing through this era at the present time. One must realize that a great many cases are prolonged by over-treatment rather than by insufficient treatment. Even the use of sounds, which is so commonly carried out in the presence of a purulent discharge, I consider one of the worst procedures in the practice of medicine. Why anyone could believe that dilating an already inflamed and infected mucous membrane could possibly help is hardly conceivable. It is never used in chronic cases with crypts or folds of mucous membrane, loci of infection. It is necessary in strictures, and if properly handled, it is at least as an acute procedure as the urethra are due to the urethra than to the

#### THE GLASS TEST

The two-glass test is a very valuable procedure in checking up the progress of the disease, and, for this reason, patients with this infection must be urged to appear at the office twice weekly prepared to void. There have been many interpretations described in textbooks regarding the two-glass test. This does not need to be repeated herein. The presence of shreds, even in the first glass, long after discharge has ceased, is a definite indication to continue treatment, because, with shreds present, the patient is still infected with gonorrhea. Occasionally, both glasses will show cloudiness and not infrequently is this due to phosphates which, of course, will easily be differentiated by the addition of a few drops of acetic acid. Another important interpretation of the two-glass test is the fact that if the shreds are present in both glasses, injections should never be used. In these cases we are undoubtedly dealing with a posterior involvement which will require very gentle prostatic massage with a full bladder, approximately once a week.

Since the use of antigen treatment, either intradermally or subcutaneously, combined with the use of internal urinary sedatives, the writer has definitely noticed more rapid recovery, generally speaking, and certainly a very noticeable decrease in the percentage of complications. The occasion has been very rare indeed when it has been necessary to fulgurate or otherwise treat certain glands in the roof or floor of the urethra. Such technicalities are splendid subjects to talk about but hardly adaptable as a cure for gonorrhea. The writer feels quite the same regarding diathermy. After persistent trial, he is through with it in acute urethritis or any of its complications.

#### COMPLICATIONS

Complications are frequently caused by too much local treatment and yet many cases are seen by every urologist only at the time of complications in which no local treatment has been used. The writer believes very firmly that a certain number of complications are due simply to variations in the virulence of certain gonococci. Some strains of the organism tend to spread and produce complications very early in the disease, whereas, on the other hand, milder strains account for the rapid recoveries in the first week or two, which

we occasionally see. A few years ago 8 patients who had all been infected from the same source were under the care of the writer. Six of the 8 developed prostatic abscess during the first two or three weeks and another one a very severe epididymitis. Does this not suggest that the virulence of the organism is a factor in many who develop complications?

**PREVENTION**—The prevention of complications should be a part of the treatment in every case. Occupation, exercise, habits, and other things are all contributing factors. For example, it has been noted that epididymitis frequently occurs in paper hangers. Such occupations requiring reaching and twisting of the body cannot help but induce organisms into the vas deferens, and likewise to the adjacent structures. Rest is the best preventive of complications, and our nearest approach to this is a sincere effort on the part of the patient to consider this factor at all times during his infection.

Sounds, bougies, too early massage of the prostate, improper drainage, and chemical irritation are, of course, well known causes of complications, such as epididymitis, prostatic abscess or edema, vesiculitis, periurethral abscess, and stricture. Periurethral abscess is certainly much less in its occurrence when the gonorrhoeal bag is omitted—all of these commercial attachments are designed to shut off the urethra, where the penis is suspended in the gauze hammock. For this reason, I merely mention that the use of a square gauze, 8 by 10 inches, pinned to the underwear and worn as an apron, allows proper drainage, freedom from pressure, and curiously lowers the incidence of complications.

**TREATMENT**—In a paper such as this, one cannot include in detail the treatment of all of the various complications such as have just been mentioned. Epididymitis, probably the most common one, is still without a specific remedy. Calcium, in the form of gluconate or diasporel, given intravenously, together with rest in bed, elevation and immobilization of scrotum and the application of heat, is probably the best treatment for this phase of the infection. It relieves the pain immediately and the swelling and disability in from four to seven days. After a thorough and persistent effort with diathermy, the writer's opinion is that just as many cases were made worse as were made better.

Acute prostatic abscess, prostatitis, and vesiculitis are best handled by hospitalization, where twice a day warm rectal irrigations may be used to advantage combining this with the daily intravenous use of calcium. Periurethral abscess naturally requires surgical drainage. During the past two years, since using bouillon filtrate or antigen treatment as a part of the routine, there has definitely been a lower incidence of complications during treatment. This part of the treatment is continued weekly or twice weekly in any complication which might arise, along with the above mentioned pseudo specifics.

#### DETERMINATION OF CURE

The average patient will soon cease to make his appearance at the office after the discharge disappears unless he is constantly warned regarding the importance of a cure. The author has actually found it very beneficial to get the patient clinically interested in watching the examination at each visit, especially of the two glass test. If it is pointed out to him that these will soon disappear with a little further treatment, he is certainly going to be more inclined to adhere to the routine until his case shows complete recovery. In the uncomplicated case, after the discharge has been absent for three weeks and both glasses are free from shreds, he is then placed on a probationary period and appears at the office once weekly, simply for observation without any further treatment. At this time, and not until this time, is he discharged as recovered if conditions continue to remain clear. Too many false cures are determined simply because gonococci are not found in the smear. Recurrences or relapses in gonorrhoeal urethritis in most instances, are due to improper follow-up. Persistent morning discharge is frequently due to the morning squeezing habit. This continually irritates the anterior urethral glands. It is one habit which from the very beginning *must be eliminated*.

In conclusion therefore, the author urges that conservatism must be constantly kept in mind when treating acute gonorrhoea. Internal treatment along with the administration of antigen, or very minute doses of vaccine have proven more efficient than any form of irrigation or injection in the first week or two, or even three weeks after the onset. If injections are to be used, they should never be started

until this time. Cooperation as well as confidence must be gained from the very beginning, then subsequent follow-up and cure of the disease will result. It should always be remembered that it is the resistance of the patient's own urethra that destroys the gonococcus and not what we

put into it. Our duty is to increase the ability of the urethra to rid itself of the infection, and the sooner we realize that this cannot be accomplished by any chemical action alone, the sooner will we be headed in the right direction in the management of this infection.

## THE TREATMENT OF CHRONIC GONORRHEA IN THE MALE

ERNEST M. WATSON, M.D.

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It is seldom that male patients in the early and middle decades of life become any more dejected during protracted treatment or grasp any more hopefully to well-directed encouragement than when their own intuition, their friends, or perhaps a questionably outspoken physician labels their case one of chronic gonorrhea.

How often have we had to answer such questions as, "Is this disease really curable, doctor?" "If I am cured of the discharge will the poison still be in my system?" "Will this come back on me in later life?"

These few words of introduction serve only too well to marshal before our memory a very appreciable array of patients, whose gonorrheal infection had become chronic. A condition sometimes due to markedly virulent organisms in a particularly susceptible field, at other times to inadequate or ill advised treatment, at others to irritative and somewhat heroic measures too long continued, and finally to unrecognized extension of the infection beyond the urethra itself.

The multiplicity of the drugs suggested for internal medication, the pages that have been compiled advising when to irrigate the urethra, in preference to treatment by injections, and likewise the same number of pages by equally competent observers cautioning against the therapeutics of irrigations because urethral injections should be the method of choice, make us all appreciate that the last chapter has yet to be written in the management of gonorrheal infection.

The treatment of gonorrhea is an art. It always has been, and may continue to be for many decades to come. This art can rise to a high level of expression only when its underlying basis is a well-ingrained knowledge of the anatomy of the

lower urinary and genital tracts, of the pathological changes in these structures secondary to infection, and the effects on the normal and changed tissues of the various chemical agents employed to combat the infection. The more gently, the more regularly, the more thoroughly we treat our early cases of urethral infection the less chronic gonorrhea are we going to be called upon to treat.

Of basic importance in handling our cases of chronic gonorrhea is the accurate use of the microscope and the faithful observance of the two- or three-glass test.

When the discharge persists, even intermittently, with the offending organisms still present in the stained smears, for longer than 3 to 4 weeks we may readily assume that we are dealing with a resistant infection that for a workable basis we can term chronic. The appearance of a discharge at the meatus means that the anterior urethra is involved. This may be involved chronically from a deep invasion of a few organisms in the submucosa, or may be involved because one or more of the urethral glands have become infected. Often we can gently palpate along the urethra and locate a small shot-like structure which may or may not be tender, and immediately our suspicions are well founded that we have a localized focus which very probably is playing an important part in keeping infected the anterior urethra. When the anterior urethra alone is infected or the anterior urethra plus Cowper's glands or other periurethral glands, the second and third glass of voided urine is clear and without shreds. The first glass of urine passed in this instance contains the incriminating evidence of cloudiness and shreds. In chronic gonorrhea with a slight or moderate discharge containing the gono-



cocci and with the second and third glass of urine clear, we are justified in continuing our treatment of the anterior urethra for a week or two, or even three, by such means as we feel best suited to eradicate the infection. A method that is yet to be replaced in its simplicity and effectiveness is to use about three pints of a warm solution of potassium permanganate in a strength of 1:5000 to 1:8000 as an anterior urethral irrigation. The fluid is allowed to flow gently into the urethra, leaving plenty of space for the return flow by not holding the irrigating nozzle too tightly against the meatus and regulating the force of the flow by well-timed pressure of the thumb and finger on the rubber tubing back of the nozzle. In anterior urethral involvement alone nothing is to be gained by allowing the fluid to run back into the bladder, and often extension of the infection to the posterior urethra and adnexa is brought about by this procedure. In mentioning warm permanganate as irrigating fluid in chronic anterior urethritis of gonorrheal origin, the author is not unmindful of the many other chemicals that may be used. Acriflavin 1:30,000, mercurochrome 1:8000 to 10,000, silver nitrate 1:15,000, bichloride 1:60,000, have all been used in varying strengths. The author believes, however, that for the needs at hand they are not superior to permanganate. In augmenting the therapeutics of permanganate irrigations the urethral injections of a 5 to 10 per cent fresh solution of a silver nuclein has been very effective. A plan of proven value has been to give a urethral irrigation of permanganate two or three times a week followed immediately by a urethral injection of 4 c.c. of a 10 per cent solution of argyrol which is held in the urethra for five minutes. Great care should be taken not to overdistend the urethra and to use all possible gentleness. After suitable instructions the patient is then given a prescription of argenticide 1:60, 4 c.c. of which he uses three times a day, after voiding, as a urethral injection, with instructions to hold the solution in the urethra for five minutes.

In by far the most instances the chronic infection of the anterior urethra is kept up by an active, subacute, or not rarely by a latent focus in the posterior urethra, the verumontanum, the prostate gland, the seminal vesicles, ampullae, and in some instances even the epididymis after the lat-

ter has once become infected. Infection in any of the structures just mentioned which lie back of the external sphincter or cut-off muscle at the onset and usually for some time afterward give a definite cloudiness in the first and second and also the third glass of voided urine—which cloudiness when we examine the sediment from the glasses microscopically, we find to be due to pus, also almost without exception—while the subjective symptoms are present, showing gonococci in the stained smears.

Our determination of the structure or structures involved when the two or three glasses of voided urine are cloudy is first a matter of rectal palpation. On gentle rectal examination of the chronic case if the prostate gland is changed in consistency, if the gland is enlarged, somewhat indurated, not freely movable, we are justified in massaging it carefully and expressing a few drops of prostatic fluid for examination. A thick yellow drop of prostatic fluid is suggestive of infection, and when under the microscope this fluid contains 10 to 20 to 100 per cent of pus cells, we are dealing with an infective prostatitis.

For this condition a course of gentle, later increasing to firm prostatic massage every three to four days is indicated. If on rectal examination the seminal vesicles are enlarged, swollen, and tender, a frequently associated condition with prostatitis, they, too, should be gently stripped of their contents. Occasionally the vesicles are much more strikingly involved than the prostate which remains rather small, soft, and freely movable; in that case the rectal massage is confined particularly to the vesicular stripping. Following rectal massage urethral irrigations—at first to the anterior urethra—should be continued, together with the injections. This is done to limit any more extensive involvement of the urethra, and to gradually overcome that which always exists there. As the urethral discharge practically disappears and the second and third glasses of voided urine remain cloudy, 4 to 5 c.c. of 10 to 15 per cent argyrol deposited in the posterior urethra by means of the Keys-Ultzman syringe and the excess allowed to flow beyond the internal sphincter into the bladder over the trigone is very helpful. At this time, too, deep urethral irrigations into the bladder allowing the patient to void the

until this time. Cooperation as well as confidence must be gained from the very beginning, then subsequent follow-up and cure of the disease will result. It should always be remembered that it is the resistance of the patient's own urethra that destroys the gonococcus and not what we

put into it. Our duty is to increase the ability of the urethra to rid itself of the infection, and the sooner we realize that this cannot be accomplished by any chemical action alone, the sooner will we be headed in the right direction in the management of this infection.

## THE TREATMENT OF CHRONIC GONORRHEA IN THE MALE

ERNEST M. WATSON, M.D.

*From the Department of Urology, Medical School, University of Buffalo, and the Urological Service of the Buffalo City Hospital*

It is seldom that male patients in the early and middle decades of life become any more dejected during protracted treatment or grasp any more hopefully to well-directed encouragement than when their own intuition, their friends, or perhaps a questionably outspoken physician labels their case one of chronic gonorrhea.

How often have we had to answer such questions as, "Is this disease really curable, doctor?" "If I am cured of the discharge will the poison still be in my system?" "Will this come back on me in later life?"

These few words of introduction serve only too well to marshal before our memory a very appreciable array of patients, whose gonorrheal infection had become chronic. A condition sometimes due to markedly virulent organisms in a particularly susceptible field, at other times to inadequate or ill advised treatment, at others to irritative and somewhat heroic measures too long continued, and finally to unrecognized extension of the infection beyond the urethra itself.

The multiplicity of the drugs suggested for internal medication, the pages that have been compiled advising when to irrigate the urethra, in preference to treatment by injections, and likewise the same number of pages by equally competent observers cautioning against the therapeutics of irrigations because urethral injections should be the method of choice, make us all appreciate that the last chapter has yet to be written in the management of gonorrheal infection.

The treatment of gonorrhea is an art. It always has been, and may continue to be for many decades to come. This art can rise to a high level of expression only when its underlying basis is a well-ingrained knowledge of the anatomy of the

lower urinary and genital tracts, of the pathological changes in these structures secondary to infection, and the effects on the normal and changed tissues of the various chemical agents employed to combat the infection. The more gently, the more regularly, the more thoroughly we treat our early cases of urethral infection the less chronic gonorrhea are we going to be called upon to treat.

Of basic importance in handling our cases of chronic gonorrhea is the accurate use of the microscope and the faithful observance of the two- or three-glass test.

When the discharge persists, even intermittently, with the offending organisms still present in the stained smears, for longer than 3 to 4 weeks we may readily assume that we are dealing with a resistant infection that for a workable basis we can term chronic. The appearance of a discharge at the meatus means that the anterior urethra is involved. This may be involved chronically from a deep invasion of a few organisms in the submucosa, or may be involved because one or more of the urethral glands have become infected. Often we can gently palpate along the urethra and locate a small shot-like structure which may or may not be tender, and immediately our suspicions are well founded that we have a localized focus which very probably is playing an important part in keeping infected the anterior urethra. When the anterior urethra alone is infected or the anterior urethra plus Cowper's glands or other periurethral glands, the second and third glass of voided urine is clear and without shreds. The first glass of urine passed in this instance contains the incriminating evidence of cloudiness and shreds. In chronic gonorrhea with a slight or moderate discharge containing the gono-

cocci and with the second and third glass of urine clear, we are justified in continuing our treatment of the anterior urethra for a week or two, or even three, by such means as we feel best suited to eradicate the infection. A method that is yet to be replaced in its simplicity and effectiveness is to use about three pints of a warm solution of potassium permanganate in a strength of 1:5000 to 1:8000 as an anterior urethral irrigation. The fluid is allowed to flow gently into the urethra, leaving plenty of space for the return flow by not holding the irrigating nozzle too tightly against the meatus and regulating the force of the flow by well-timed pressure of the thumb and finger on the rubber tubing back of the nozzle. In anterior urethral involvement alone nothing is to be gained by allowing the fluid to run back into the bladder, and often extension of the infection to the posterior urethra and adnexa is brought about by this procedure. In mentioning warm permanganate as irrigating fluid in chronic anterior urethritis of gonorrheal origin, the author is not unmindful of the many other chemicals that may be used. Acriflavin 1:30,000, mereurochrome 1:8000 to 10,000, silver nitrate 1:15,000, bichloride 1:60,000, have all been used in varying strengths. The author believes, however, that for the needs at hand they are not superior to permanganate. In augmenting the therapeutics of permanganate irrigations the urethral injections of a 5 to 10 per cent fresh solution of a silver nuclein has been very effective. A plan of proven value has been to give a urethral irrigation of permanganate two or three times a week followed immediately by a urethral injection of 4 c.c. of a 10 per cent solution of argyrol which is held in the urethra for five minutes. Great care should be taken not to overdistend the urethra and to use all possible gentleness. After suitable instructions the patient is then given a prescription of argentine 1:60, 4 c.c. of which he uses three times a day, after voiding, as a urethral injection, with instructions to hold the solution in the urethra for five minutes.

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contents when full may very helpfully precede the instillations. Prostatic massage and vesicular stripping when necessary should continue two to three times a week for several weeks—sometimes for several months—or until the voided urine in the three glasses is free from pus and the prostatic smears are several times negative for gonococci. In occasional instances the posterior alone will be involved with the verumontanum enlarged, swollen, hyperemic, and its ducts exuding pin points of pus when viewed through the endoscope. As a rule, these cases have only a minimal involvement of the prostatic ducts, and deep instillations alone will suffice to clear up the infection. After a few weeks' treatment if the cloudy urine still persists, endoscopic applications of 10 to 20 to 30 per cent of silver nitrate to the veru itself is of value. In the more resistant infections fulguration of the veru with the mild coagulating current through the endoscope should be tried.

Very infrequently if our case has been carefully handled and intelligently supervised, do we encounter a stricture of the urethra, except where stricture exists as the result of a previous infection. When such is the case, however, the discharge when possible should be reduced to a low level by irrigations and injections before we institute dilation of the constricted area with the leaded flexible bougies. In the more intractable of strictures it is sometimes necessary to do an internal urethrotomy, preferably with the Maisonneuve urethrotome, before satisfactory drainage can be obtained.

In all cases of chronic gonorrhea several dilations of the urethra with the flexible leaded bougies up to 24° to 26° F. and then with the Kollman dilator is a well-chosen procedure to insure a patency of the openings of the prostatic tubules, and also a normal-sized anterior urethra. This procedure naturally should follow, unless otherwise indicated, after we believe the infection is eradicated, or at least reduced to a very low level.

Throughout the course of any urethral or associated infection an increase in the fluid intake is beneficial—eight to ten glasses of water a day should be advised and an effort made to keep the reaction of the urine as near neutral as possible. As to medication by mouth in the gonorrheal infection that has become chronic, there is

very little of proven value available. The balsamics by their presence in the urine and their effect on the posterior urethra may exert a slightly soothing action which hastens the curative effect of the local measures indicated. Acriflavin in tablet form, 1 to 2 gr. three times a day after meals, has sometimes appeared to have an inhibiting effect when the cloudiness involves the entire three glasses. Alcohol in any form or in any amount has no place in the diet of the chronically infected gonorrheal patient.

For the most part we may accurately consider chronic gonorrhea as a local infection, in which one or more structures may be involved. The vaccines, foreign proteins, hyperthermal applications to the urethra, and the bacteriophage, with our present knowledge, appear of value not as routine procedures, but in the exceptional case when our best directed local efforts have failed to bring about a germ-free cure in a reasonable time.

In gonorrheal arthritis the polyvalent vaccines or better still a vaccine made from the patients own strain of organisms are of definite value in supporting any local treatment.

The surgical complications of chronic gonorrhea are infrequent. In general practice one may work a lifetime and never encounter an abscess of either seminal vesicle or even a prostatic abscess. In involvement of the epididymes, too, incision and drainage should be reserved for the unusual case and reliance placed on palliative measures of rest, heat in the form of diathermy, and increased fluid intake for the average case.

Many additional drugs could easily be mentioned, other quips and quirks could be emphasized in local treatment, and many minor and some major surgical procedures could be graphically described. In the exceptional case an unusual but therapeutically sound procedure may be drawn from the experience of the past to aid us, but the thought always should be to obtain an accurate anatomical diagnosis of the parts involved, and then to proceed with gentleness employing procedures of proven value and at least leave our patient no worse than when we found him. Many a stricture and fibrotic prostate of the present not to mention an irremedial sterility can be traced back to ill-advised, heroic, and too rapid therapeutics of the past.

## GONORRHEA IN THE FEMALE

R N RITCHIE M.D.

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Considering the prevalence of gonorrhea in women, the intractability of its local processes, and its far reaching influence on the health and bodily resistance of the individual, it must be regarded as one of the most important gynecologic diseases. Because of the anatomical arrangement of the female genital tract, the disease in women is far more varied and difficult to treat than in men.

There have been many papers published dealing with the frequency of the condition. Some grossly overestimated, others underestimated. Noeggarath's sensational paper in 1872 stating that 80 per cent of married men and as many wives had acute or chronic gonorrhea in New York is an example of the former. Like so many who become absorbed in a topic, those who have interested themselves in this subject, are liable to lean backward and unconsciously overestimate actual figures.

Gonorrhea has an unusual standing among infectious diseases, not only in its clinical manifestations, but also in the fact that its specific organism, the gonococcus, has certain special characteristics that differentiate it from all pathogenic bacteria. The microscopic appearance and the morphology of the gonococcus cannot be dealt with in this paper, as we are chiefly interested in its clinical manifestations and treatment.

It is well known that there is no immunity whatever, either from previous attacks or by individual resistance such as belongs in some form to most other organisms.

The gonococcus finds its place of abode in mucous surfaces, where it lives for the most part superficially between the interstices of the epithelial cells, and as a result spreads by contiguity from cell to cell. It has little tendency to invade the lumina of deep-lying glands, such as those of the cervix and the vulva, but confines its activities to the glandular ducts, nor does it have a tendency to penetrate into subcutaneous connective tissue, nor invade the lymph and blood channels, although it may do all of these things occasionally. As we anticipate, it attacks the joints and the valves of the heart, and a few cases of general gonorrheal

septicemia have been reported. The organism has a special predilection for certain mucous surfaces and when it comes in contact with these surfaces grows immediately in the same manner as do other bacteria on their favorite culture media. No abrasion or injury of the tissue surface is necessary, the normal, uninjured epithelium being sufficient for its life and reproduction. When confined in occluded spaces like that of a sacculopexia, the gonococcus soon dies, whereas in unrestrained secretions it retains considerable longevity and virulence.

The gonococcus is a human parasite exclusively. It is not found outside the human body, nor can it readily be inoculated in other human tissues, its culture media must be made from human secretions. As a result of this tendency methods of treatment are difficult and painstaking. The gonococcus is extremely sensitive both to heat and cold, a slight deviation one way or the other will destroy its growth. It is readily crowded out by other organisms. It is not readily killed by most antiseptics. On account of its tendency to invade the epithelium of tissues on which it grows, it is necessary to use such antiseptics as have the property of penetrating epithelial cells without damaging the normal tissue. Examples of these antiseptics are numerous, *e.g.*, many silver preparations, iodine, permanganate of potassium, and methylene blue, mercurchrome, Dakin's solution. These antiseptics are not effective in the presence of serum.

Another point of clinical importance is that it grows on moist surfaces. Under dry conditions it soon dies. If the surfaces are constantly moist, such as in the genital tract, the organism lives, but is temporarily inactive. In other words, the patient has gonorrhea without symptoms. Its lurking characteristics keep it safe from injuries which do not destroy the epithelial cells between them, so that it may remain dormant for long periods of time until stimulated into activity by changes in the circulation of surrounding tissue. The limit of latency is a conjecture—probably 3 to 4 years in men, and 4 to 6 years in

women, but this is open to discussion. Re-infection is the problem under such circumstances.

The favorite lurking places for latent gonococci are in secluded and well-protected folds of certain tissues for which they have a predilection. Examples of these are the prostate gland in the male, and in the female Skene's tubules, the ducts of the cervical and vestibular glands, and the lining of the fallopian tubes. The latent germ may light up into acute activity in several ways: It may produce a fresh attack in the individual in whom it has been residing as a latent parasite, or it may be transferred to another individual and, finding there a fresh soil more congenial to its growth, incite a new process. The condition that favors an awakening of a latent gonorrhea most is the transferring of fresh nourishment to the tissue on which it exists as a result of hyperemia, such as may be brought about by excessive intercourse, menstruation, childbirth, and operative procedures. It is this power of latency which makes the gonococcus so treacherous an organism, makes its treatment so difficult, and which renders so futile the efforts to prevent the extensive ravages that the disease makes on the health of women.

According to many, the gonococcus does not pass through a true incubation period but begins to grow and multiply in a very short time after being transplanted. The reaction in the tissues appears within from 12 hours to 2 days, and according to some writers, never more than 3 days. The tissue requirements for the active development of the gonococcus are that it be soft, delicate, continually moist, and well supplied with blood. The epithelial surface it attacks is varied—modified epithelium like that of the urethra, delicate squamous epithelium of the vagina, or it may be cylindric mucous epithelium like that of the endocervix, or it may be the meso-epithelium of pelvic peritoneum.

When the gonococci have gained their foothold on the surface of the epithelial cells, the inflammatory reaction of the tissues begins at once. The capillary blood vessels are distended and through the walls wander great numbers of leukocytes into the connective tissue. These are followed by lymphocytes and plasma cells. There soon takes place from the epithelial surface an exudate which is at first serous, but later becomes purulent. The sub-epithelial edema and swelling causes

necrosis and desquamation of the surface layer, resulting in small ulcerations.

The discussion of this problem up to the present concludes that the surface epithelium of the various parts of the female genital system offers favorable soil for the growth of the gonococcus, and the infection of each one of these parts constitutes more or less a special disease requiring special treatment, and which may exist as an affection by itself or be associated with infections of other parts of the genital tract.

The parts of the genital tract which may be infected are as follows:

1. Skene's ducts or para-urethral glands.
2. Bartholin glands.
3. Endocervix.
4. Endometrium (rarely).
5. Fallopian tubes.
6. Ovaries.
7. Pelvic peritoneum.

A short discussion of the involvement of these parts will aid in a better understanding of some of the modern methods of treatment which will be discussed shortly.

The Skene's ducts are the small secreting structures on each side of the meatus of the urethra. An inflammation of these ducts is pathognomonic of gonorrhea as they are rarely infected by any other organism. The ducts appear inflamed, the meatus is swollen and red, and the ducts, which are normally not discernible, are distended and pouting, and a characteristic exudate may be expressed. The disease of the glands usually ceases with a healing process, or the infection becomes more or less constant. A virulent strain of the gonococcus manifesting itself with a positive smear. Following treatment for a considerable length of time, the infection may become mixed, which frequently happens, and then the process becomes chronic, the gonococci being crowded out by the other organisms. Nevertheless, the primary lesion was caused by the gonococci. If the secondary infection predominates, small pus pockets in the urethral meatus are formed, and there is a constant irritation. Sometimes the process burrows more deeply into the tissue and causes a peri-urethral abscess with an opening into the urethra resulting in periodic discharge of pus into the urethra. Because of not always obtaining a positive smear under such conditions, the condition is frequently at-

tributed to some other cause. We are not familiar with any other cause which will produce such clinical symptoms and pathological findings in the urethra. One must always remember that negative smears are the results of the gonococci being crowded out by other bacteria. This point cannot be too strongly emphasized in determining the etiological factor causing the infection. The author stresses the importance of examining the meatus of the urethra carefully for infection, as it is frequently overlooked in searching for infection in other parts of the genital tract, and not finding the primary lesion, the diagnosis is missed; and later when the infection has spread, the involvement is frequently beyond repair. Not only must it be carefully examined, but exudate must be expressed from the ducts and several smears taken to rule out the gonococcus, more particularly if the infection is recent with slight urinary symptoms.

The Bartholin glands may be infected primarily, but the infection is usually secondary to an infection elsewhere, especially the urethra. They are rarely infected by any organism other than the gonococcus. Accordingly, any inflammation of them constitutes almost a positive stigma of gonorrhea. If the infection extends to the main part of the gland, an abscess is formed, or it may be dormant and light up at some later period. The initial infection may pass unnoticed and no evidence of disease in the gland appears until long after other manifestations of gonorrhea have disappeared. Inflammation is almost sure to recur if the gland is not entirely excised. Recurrence may take place some years after the initial infection.

The clinical picture, both subjectively and objectively, is characteristic and needs no further discussion. The important point in treatment is not incision of the gland, but excision. Frequently we hear discussed the congenital cysts of the Bartholin glands. These are rare and what actually occurs is that the duct has become occluded as a result of initial gonorrheal infection. Secretions of the gland cause a retention cyst which appears long after the first infection. As a result of this pathological change, we look upon cysts of Bartholin glands as the result of an old gonorrheal infection, and this condition is to be regarded as a fairly reliable stigma of the disease.

The vagina in a sexually mature women

is rarely the primary seat of gonorrheal infection. It takes part in the general inflammation particularly in young girls, becoming swollen, red, tender, and bathed in pus. It is very amenable to treatment which will be discussed under the general treatment of gonorrhea.

In order to understand cervicitis, we must have some knowledge of the histologic anatomy of the cervix in its normal state. The membrane lining the genital canal of the vagina, cervix, uterus, and tubes has a common origin and constitutes the so-called Müllerian epithelium. The Müllerian epithelium in its final development is not uniform, but takes on specific modifications in each of the organs of the genital tract in order to meet the different functional requirement. Naturally from this anatomical arrangement when the vagina becomes involved, the vaginal portion of the cervix cannot escape and becomes the most intensely inflamed part, being red, swollen, and angry looking. In a short time the endocervix becomes involved and the cervix becomes hypertrophied, the glands cystic, and the edges of the external os show evidence of erosion. As a result of the involvement, it must be our purpose to prevent the acute stage from spreading into the endocervix, as in this location we are dealing with a chronic cervicitis, the results of an acute gonorrheal infection which is difficult to treat and is the cause of so much destructive surgery for the eradication of a chronic condition. The unfortunate part of acute gonorrhea of the cervix is that it gives no symptoms other than a leukorrheal discharge, and the time immortal treatment with douches relieves the discharge for a time and the condition is neglected on account of the absence of pain, which we never have associated with acute cervicitis per se. As a result of this neglect, we now have developed a special disease of the cervix which is of great clinical importance. We are now dealing with a mixed infection as found in Skene's and Bartholin's glands. The gonococci are crowded out by other organisms and the infection is carried into the lumina of the racemose glands of the cervix. The irritation of the infection stimulates the mucous cells to hypersecretion so that a stream of mucopurulent material is continually poured out into the cervical canal, thus producing a constant leukorrheal discharge characteristic of the disease. The glands continue to secrete without an outlet and

thermal death time is divided into 3 groups:

1. Group sensitive to heat, much less than thermal death time is required.
2. Moderate sensitivity to heat, a good part of the period is required.
3. Very resistant sensitivity to heat, full thermal death time is required. This grouping probably explains some of the failures.

We have had 61 cases with different thermal death times. So far, Dr. Warren feels that we are dealing with many strains of gonococci.

Positive smears were easy to obtain, but positive cultures were more difficult, although it is easier to obtain a positive culture from a female than a male. In the case of a negative culture with positive smears, the culture was repeated and if still negative, the patient was given 5 hours of general fever treatment as a routine procedure.

Dr. Warren felt that this was a strenuous treatment for each individual patient and devised a modified Elliott treatment, going one step further by determining the thermal death time of the gonococcus from each individual patient. He inserted a metal applicator into the vagina with a to and fro continuous water flow. This was attached to an electric pump which kept the water flowing into a container in the vagina for any length of time desired. The temperature, regulated by a constant tem-

perature bath, was kept at 43.5° C. We term this local heat treatment. Water at 43.5° C. is safe but at 44° C. burns. The duration of time for this treatment has been 60 to 100 hours. Thermal death time of the gonococcus for this group, which was resistant, was 18 to 24 hours. In 15 cases the cures were 50 per cent. The remaining 50 per cent were given general fever treatment for 5 hours and then local heat treatment for 60 hours several days later. It is too soon to give correct figures on this group, as the work is still being completed. For complete details of this work, the reader is referred to the articles by Dr. S. L. Warren and Dr. Charles Carpenter, Associate Professor of Bacteriology, which appeared in the *American Journal of Medical Sciences*, 1933, the *Journal of Experimental Medicine*, and the *Journal of Laboratory and Clinical Medicine*. Other articles will be published shortly.

In conclusion we believe that studying the thermal death time of gonococci is the method by which we can classify the strain and thereby adopt a treatment according to its sensitivity, whether it be by the heat method described or some other. We have known that the gonococcus is destroyed by marked variations in temperature, and this method of approach has great scientific possibilities, although it is still in its early development.

### DANGEROUS FAT REDUCERS

The "reducing racket" has a group of new and dangerous drugs, dinitrophenol and related compounds. Racketeers are selling these drugs as fat reducers in spite of reports of deaths caused by their compounds, says W. G. Campbell, Chief of the Food and Drug Administration. "Reducing-agents containing these drugs," says Mr. Campbell, "have sprung up like mushrooms all over the country, and are endangering the lives of patrons. The Federal Food and Drug Act has no jurisdiction over products of this type, dangerous though they may be. All that the Food and Drug Administration can do is to warn the public that these compounds are dangerous."

Clinical evidence shows, Mr. Campbell said, that these drugs act by increasing the metabolic rate. This amounts to a speeding up of the body process, resulting in a destruction of the tissues, including fat, to provide fuel for the accelerated metabolism. Common symptoms are increased temperature, pulse, or respiration, or copious sweating. In particular, Mr. Campbell

warned, these drugs should not be used by individuals suffering from chronic rheumatism, alcoholism, tuberculosis, or diseases of the heart, liver, or kidneys, as poisonous and otherwise harmful effects are even more likely to manifest themselves. There is also some evidence that they may cause profound disturbances of the blood-forming organs.

These drugs, in common with many others, may serve a useful purpose when the dosage is properly adapted to the needs of the individual patient, provided there are no contra-indications to its use, he says. Proper dosage and indications for use, however, as well as prompt discovery of toxic effects, can be determined only by a skilled physician. Furthermore, there may be unexpected harmful effects that are not disclosed by the first tests. Such effects can be determined conclusively only after extensive trial and use, in addition to the tests which should in all cases be made before the preparation is offered to the public.



## MINOR COMPLAINTS OF PREGNANCY

CHARLES J. MARSHALL, M.D.

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The so-called "minor complaints" or symptoms of pregnancy were studied in 165 consecutive private patients. 116 of them were primiparae and 49 multiparae. These have been subdivided into the following groups with the percentages of cases of particular complaints.

### ABDOMINAL PAIN (83 per cent)

Blakely<sup>1</sup> in a recent study found that 85 per cent of his pregnant patients had abdominal pain.

This pain was usually located in the lower abdomen. During the first trimester the corpus luteum of pregnancy often caused pain in the right or left lower quadrants. It usually disappeared at 4 months. (This complaint, and the nausea and vomiting of pregnancy, may cause a mistaken diagnosis of appendicitis.) Occasionally, if vomiting was frequent, there would be some distress in the epigastrium, possibly due to cardiospasm or slight liver necrosis.

During the latter months, discomfort was present more often over the lower lateral surfaces of the uterus, and in the inguinal region. Probably this was due to the stretching of the round ligaments as the uterus enlarged. Sometimes, with slight torsion of the uterus, the pain would be more severe over one ligament. Lying upon the painful side relieved it. Braxton-Hicks contractions during the last two months were occasionally painful. In one breech case a tender area was felt over the right cornu of the uterus, which disappeared immediately when spontaneous version took place.

Unrelieved constipation and gas distention of the colon caused pain in the region of the hepatic and splenic flexures. Pain and tenderness over the gallbladder was not infrequent, and in three instances it was proven to be due to cholelithiasis. Higgins and Mann<sup>2</sup> claim that the emptying of the gallbladder was much delayed in some pregnant animals.

### "MUSCLE CRAMPS" (68 per cent)

"Muscle cramps" or "tetanoid" contractions of the muscles of the lower extremities were most frequent during the night and early morning, before arising.

At times the spasm in the foot would resemble the contractions seen in true tetany. Seldom were cramps present in the upper extremities. One patient stated that her father was subject to muscle cramps of the feet and legs throughout his entire lifetime. She had them daily throughout her pregnancy, and also during labor.

In over 50 per cent the onset was during the first two trimesters; a few in the first trimester. This fact probably refutes Adair's<sup>3</sup> statement that they are "due to muscle strain in nature's effort to maintain the body balance as the center of weights shifts forward." Hartley<sup>4</sup> mentions them as part of a "tetanoid state," possibly due to a disturbance in the calcium metabolism. In several severe cases he obtained good results using calcium and parathyroid therapy. The parathyroid glands apparently hypertrophy during pregnancy, indicating that possibly an increased secretion is needed.

Hartley<sup>5</sup> also reports that he can predict "muscle cramps" beforehand if the patient has had severe menstrual cramps previous to pregnancy. Thirty cases in my series had had menstrual cramps, but only 10 of them had "muscle cramps" often, and 10 others occasionally.

Walking and brisk massage of the leg were most beneficial. In this series the use of calcium gluconate 120 gr., 1 qt. of milk and viosterol, min. xxx, daily, seemed of very little benefit. Richardson<sup>6</sup>, however, claims that he had good results with similar therapy.

### BACKACHE (60 per cent)

Backache seemed to be due to several causes. Strain of the lumbar muscles and the vertebral ligaments, due to a change in the center of gravity was often responsible; fallen arches aggravated the complaint. It was relieved by rest in bed. A maternity corset with moderately rigid stays in the back was of benefit.

Some severe lower lumbar and sacral pain was a referred pain from the enlarging uterus, occurring most frequently during the last three weeks of pregnancy. Rest and other treatment did not relieve it.

Sacro-iliac relaxation as evidenced by pain over the joint was usually unilateral and was often referred along the sciatic nerve. Usually a maternity corset would relieve it. This corset should have a strap or other device that will pull it snug over the sacro-iliac region. Also the patient's bed should have wide boards, placed transversely, between the mattress and springs. This flat surface is more comfortable for her to lie upon.

Mid-dorsal pain, with tenderness over the vertebrae and corresponding intercostal nerves was probably of rheumatic origin. Foci of infection in the teeth or tonsils were often found as a cause.

Pain and tenderness elicited in the costo-vertebral angles, radiating anteriorly and along the course of the ureters, probably were due to pyelonephritis. Pus was found in the catheterized bladder specimens in each case. Frequently an acute nose and throat infection aggravated the pain and other symptoms. Sodium citrate was used with some relief of frequency. The urinary antiseptics seemed to have very little therapeutic value in clearing up the pus in the urine. Heat would temporarily relieve the pain.

#### NAUSEA

Primiparae, 81 per cent

Multiparae, 65 per cent

The nausea of pregnancy was one of the most distressing of the many complaints. A multitude of theories and a dearth of real facts make one hesitant to mention a cause. Alvarez and Hosoi<sup>7</sup> suggest that the reversal of gradients in the bowel may account for it. This suggestion does not explain why nausea is usually more severe in primiparae. They also suggest that the woman learns to overcome it as a sailor learns to overcome seasickness. As a rule, in these cases, however, the nausea seemed in many instances to improve almost overnight. Often also the death of the fetus and placenta is signalled by the cessation of the symptom. These facts possibly point to some toxin, secretion, or other substance elaborated by either the placenta, the fetus, the ovaries, or one of the ductless glands, most likely the placenta. Is it possible that an anti-toxin is formed to combat this "toxin" or "secretion?"

Kramer-Petersen<sup>8</sup> and others have found that a hypochylia and hypo-acidity are

present during pregnancy in cases with emesis. The feeding of different acids, although it did not cure the nausea, seemed, in my series, to allow food to be better tolerated. Twenty minims of dilute hydrochloric acid before each meal was sometimes of benefit. Vegetables flavored with vinegar or lemon juice, lemonade, and orangeade seemed to be retained much better than many other foods. Of late, carbohydrate feedings have been the vogue, but they should not be in the form of candy, as sweet-tasting food is the least well tolerated. Frequent, small meals and effervescent drinks between meals, in sips, were given. Rest in bed was the most satisfactory treatment of all. Sodium amytal, gr. 3, by mouth, or gr. 6, per rectum, was occasionally used in the morning upon awakening, to overcome the "nervousness." Corpus luteum, given subcutaneously, appeared to be worthless.

#### "HEARTBURN" (45 per cent)

So-called "heartburn" was rarely present during the first four months of gestation, but often troubled the patient the last five months. As yet no satisfactory explanation of this complaint has been made. There is no proof that gastric hypersecretion or hyperacidity is a cause. Kramer-Petersen<sup>8</sup> examined the gastric contents of 90 normal pregnancies, but the vast majority had a hypoacidity or achylia. Some "heartburn" was possibly due to a regurgitation of gastric secretion, which caused a substernal burning sensation. Nevertheless one would expect that this symptom was due to hyperacidity or hypersecretion inasmuch as treatment for hyperacidity relieved it. Many of these same patients had a voracious appetite. Was the appetite caused by hypersecretion, or did overeating bring on a hypersecretion? I suggest that the former was responsible.

To prevent this discomfort certain foods were avoided, namely, fried food, sweets, highly spiced meats, lemonade, onions, radishes, raw apples, coffee, and meat soup. Milk seemed to relieve it. An antacid powder containing bismuth subcarbonate, 15 gm., magnesium oxide (light), 10 gm., and calcium carbonate, 15 gm., taken one hour after meals in teaspoonful doses was very helpful.

#### CONSTIPATION (73 per cent)

The cause of constipation in pregnancy was formerly thought to be due mostly to

pressure on the bowel by the enlarging uterus. Probably the uterus hinders bowel action instead by displacing the cecum and the sigmoid colon slightly. Many believe to-day that the enlarging uterus causes no increase in intra-abdominal pressure. Guthmann and Stahler<sup>9</sup> found a diminution in tonus of the entire gastro-intestinal tract during the last trimester. Alvarez and Hosoi<sup>7</sup> have found that peristaltic rushes were inhibited in pregnant rabbits and often reversed peristalsis was seen. The theory of atony of the bowel as a cause of constipation seems plausible. Possibly large doses of pituitrin would overcome this atony, but I have not had the courage to try it in pregnancy.

Early in pregnancy the patient eats less food, due to her nausea. Possibly this is also a slight factor.

The treatment used in this series followed usual lines. Early in pregnancy laxatives in pill form such as phenolphthalein or cascara, supplemented by an occasional enema, were used. After the disappearance of nausea, mineral oil in some form was given at bedtime, with occasional cases requiring the addition of cascara, phenolphthalein, or milk of magnesia.

#### CERVICAL BLEEDINGS (3 per cent)

In some of these patients it has been observed that the epithelium of the cervix had undergone considerable proliferation. The epithelium was heaped up in ridges instead of lying flat and smooth, and partially overlapped the external os at times. Furrows were present between these ridges, which ran in a more or less radial manner, and they were deeper on the anterior lip. Hofbauer<sup>10</sup> has recently found that in some cases "solid tongues of proliferating epithelial cells in discrete places of the cervical mucosa" are produced. This hyperplasia was noted in all cases of this series who had any cervical bleeding, and also in a few who had no evidence of bleeding. Biopsy in one case showed hyperplasia of the mucosa. Another case was reported as having a decidual reaction. Two cases had an "erosion" of the cervix present since a previous pregnancy. V. Stieve<sup>11</sup> found hyperplasia of the mucosa of the canal and a great increase in the number of blood vessels.

A slight touch with an applicator would start a flow of blood, when this hyperplasia was present. Also slight trauma, such as

sexual intercourse, was followed occasionally by a slight spotting of blood. Ten per cent silver nitrate applied to the area was usually sufficient to stop the flow. In one case rest in bed was also necessary. It was deemed advisable to prohibit coitus in all cases with a cervical erosion or with epithelial hyperplasia.

#### "VAGINAL DISCHARGE" (PROFUSE) (13 per cent)

A slight increase in the vaginal secretion is normal. Occasionally, however, a vaginitis developed, which caused a profuse and irritating discharge. *Trichomonas vaginalis* infection is supposed to be the most common cause, but it has not yet been definitely proven to be the primary invader, and the parasite is often found when there is no vaginitis. The vaginitis seemed to occur most frequently in obese women in my cases. The appearance of the vagina resembled clinically the vaginitis supposed to be due to the trichomonad. In 3 cases, however, it was due to the gonococcus, and one case was associated with a vaginitis emphysematosa.

Several methods of treatment have been used, but the most efficacious was as follows: morning and evening douche with sterile 1 per cent sodium bicarbonate solution. The vagina was scrubbed with tincture of green soap and painted thoroughly with a 10 per cent aqueous mercurochrome solution every other day. The patient was instructed to keep a small ball of cotton between the labia minora to collect the discharge before it reached the skin of the vulva. This cotton was changed frequently and was held in place with the ordinary vulva pad.

#### EDEMA (74 per cent)

Several factors are apparently responsible for pregnancy edema. Loss of tone of the venous system with a resultant sluggish flow of blood may cause a "back pressure," in the capillaries. Kaboth<sup>12</sup> found a change in ratio of the blood colloids, serum albumin, and serum globulin, resulting in a lowered osmotic pressure. The blood colloids apparently regulate fluid exchange, and this change seemed to be greater during eclampsia and nephrosis. Pressure by the enlarged uterus probably is not a factor at all, as slight edema is frequently present in the hands as well as in the feet.

In this series there were five twin pregnancies, and three of them at eight months

had only slight edema. The other two had considerable edema of the feet and hands, but it was associated with a pre-eclamptic toxemia. Likewise one case of polyhydramnios had only slight swelling of the feet. It would seem plausible that the uterus exerted no pressure in those complications.

Nephritic or preëclamptic toxemia was present in over one-half of the patients who had considerable edema. Heat seemed to increase the amount of swelling, possibly by causing venous and capillary dilatation.

Although the blood chlorides are usually normal or slightly lowered during pregnancy, occasionally a salt-poor diet seemed to be of benefit. Also one or two drams of magnesium sulphate daily relieved the edema to a considerable extent. Rest in bed caused an apparent diminution of swelling in the legs, but the fluid probably gravitated to the back, abdomen, and hands.

#### VARICOSE VEINS (18 per cent)

It was formerly believed that varicosities of the lower extremities were due to uterine pressure upon the external iliac veins, and to the lack of sufficient valves in the superficial veins in the lower extremities. However, late in pregnancy the uterus is an abdominal organ, and the thin lower uterine segment probably does not even press slightly upon these veins. Jaggard<sup>13</sup> believes "that the pregnant uterus even at term could not directly compress the ureters, and that if it did, the pressure would be no greater than that of the intestinal mass." The specific gravity of the uterus and intestinal mass are nearly the same. Therefore if the uterus cannot compress the ureters, it seems plausible that it cannot exert much pressure on the iliac veins. Kilbourne<sup>14</sup> believes that a lack of tone is present in the whole venous system, possibly due to a posterior hypopituitarism. Several in my series have noted, without questioning them, that the veins of the forearms and hands were more prominent.

Also, Kilbourne has proven that a tourniquet applied just below the knee does not hinder the venous flow upward in the deeper veins. He injected ipax in the superficial veins of the leg, and by roentgenograms observed the flow to be downward and into the deeper veins of the leg. Therefore round garters or a bandage placed just above or below the knee may be of benefit by preventing back pressure

from the venous blood column above the knee. In 3 patients of my series an elastic cloth bandage was applied in a spiral around the leg; snug below the knee and loose at the ankle. This method of application seemed to relieve the pain, but no diminution of the edema was noted.

In one of this series spontaneous thrombosis of the superficial veins caused considerable relief from pain. McPheeters<sup>15</sup> injected 92 cases during the fifth month, with good results. Probably we should occasionally use this method of cure if bandaging does not relieve the severe pain but most should be left until after pregnancy has terminated as many become much improved then and treatment becomes unnecessary.

#### INSOMNIA (15 per cent)

The inability to sleep was more often due to "nervousness" or worry over various problems than from any other cause. This was most common in those women who suffered "hysterical" symptoms such as numbness of the extremities, dizziness, and fainting. Elixir of phenobarbital, drams 2, was very beneficial if given one-half hour before bedtime. Warm baths and drinks seemed of very little benefit. Muscle cramps would awaken some patients, for a few moments, but in only two instances was this a cause of considerable loss of sleep. Pruritus vulvae was a cause in two instances, and general pruritus due to herpes gestationis was the cause in one instance. The latter was very intractable and no permanent relief was found for the pruritus. During the last month of gestation, Braxton-Hicks contractions were painful enough to awaken a few for short periods of time. Sodium amytal, gr. 3, or ortal sodium, gr. 3, would relieve them.

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## THE PHYSICAL THERAPY DEPARTMENT IN A HOSPITAL

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The necessity for a physical therapy department or clinic in any general hospital, either small or large, is recognized not only by the medical profession but by the general public as well. The average patient when entering a hospital expects that every possible means for the alleviation or cure of his trouble will be supplied, and certainly a well-organized and equipped physical therapy department is one of these. The enormous extent to which physical therapy measures were successfully utilized in our war hospitals caused a nation-wide realization of the value of such measures.

The writer will attempt to outline briefly the necessary steps to be taken in the organization of such a department. The first consideration is location. Sufficient space should be allotted for the purpose to allow for growth. As a rule, after the establishment of such a department, the number of cases referred to it by the general staff and from the various clinics increases very rapidly; and, unless adequate space has been provided, there will be overcrowding and a drop in the quality of the treatments administered. The space utilized should be well lighted and ventilated, preferably on or above the ground floor, as a large proportion of the patients are crippled or in pain and easy access is desirable. The necessity for good ventilation appears when one considers the amount of heat liberated by the various thermal units, and the necessity for a plentiful supply of fresh air is evident when one considers the usually crowded conditions of such departments; this is especially necessary where carbon arc lamps are used as a source of actinic radiation. The waiting room should be separate from the examination and instrument rooms, should have ample seating accommodation, and a lavatory provided.

The necessary equipment varies according to the size of the unit and the type of work undertaken. But a certain minimum is necessary if the unit is to function creditably.

A high-frequency machine for the administration of diathermy, autocondensation, electrocoagulation, fulguration, etc.

A low-frequency machine for galvanic and faradic treatments, muscle and nerve testing, and ionization.

Some source of radiant heat—the carbon filament lamp or the infra-red lamp—as a matter of fact, all radiant heat, whether luminous or not, consists largely of infra-red waves.

A source of ultra-violet radiation; either a mercury arc in a quartz tube or a cold quartz lamp, which consists of a bulb containing gas which is ionized by a high-frequency current flowing in a coil surrounding the bulb. The carbon arc lamp is likewise a well-known source of actinic radiation.

There should be treatment tables, an autocondensation pad, a protractor for measuring gain or loss of motion in a joint, and a sphygmomanometer for testing blood pressure when giving autocondensation.

The larger units should consist of sufficient apparatus to take care of the volume of work. This should include additional equipment such as the various exercising machines, vibrators, sinusoidal machines for electrical stimulation and passive exercise of muscles, and a well-equipped hydrotherapeutic unit. An arm and leg whirlpool bath is very useful, even in small units. The author believes a static machine of at least 12 or 16 plates should be part of the equipment in every physical therapy department. There is no other means which will so quickly allay pain and swelling in acute traumatic conditions.

**PERSONNEL.**—The selection of a qualified personnel is extremely important. The medical board of a hospital cannot use too much care in the selection of a doctor who is to take charge of the physical therapy department. The physician who has served his internship in a hospital, who has had a number of years in general practice, who is familiar with the ills, real or fancied, of the average patient, and then has studied under recognized authorities the physical means by which disease can be combated—a man who not only understands the pathology of the conditions he is to treat, but also something of the physics of the machines he will use in the treatment of disease and disability, is properly qualified to take charge of a physical therapy department. His assistants should be young men who are interested in this particular field

and are willing to devote time and study to the problems it presents.

The most important person after the head in a physical therapy department is the chief massage operator. Great care should be taken in the selection of a suitable person—one with thorough training and experience, with capable hands that can feel the least contraction of a muscle, that can differentiate edema, fibrosis, and spasticity.

The technicians employed, as well as the physicians, should be fully aware of the possibility for harm in the use of the various machines. A little carelessness in the use of actinic light or an improperly applied diathermy electrode may be the cause of severe burns and unpleasant legal complications.

**RELATIVE STANDING OF PHYSICAL THERAPY DEPARTMENT.**—In considering the great variety of cases that are referred to the physical therapy department and the very special training required for it to function successfully, it becomes obvious that the department must stand on an equal basis with the other major departments of the hospital, surgery, internal medicine, etc., and its head ranked accordingly.

The physician in charge of the physical therapy department should designate the treatment in all cases, as he is responsible for the results and, by reason of his special training, is best qualified to do so. If the referring physician desires a certain treatment given and it is approved by the physician in charge, it is all right; but if the physician in charge does not consider it advisable to give the suggested treatment, or is of the opinion that some other treatment would be more effective, he must be free to use the treatment he considers best. If the referring physician insists on the treatment he recommends being given, then the physician in charge, in order to protect himself, should require a signed order. All cases should be examined after six treatments have been given and condition noted. If no clinical improvement has occurred, it may be wise to change the treatment or send the patient to the referring department for reexamination and diagnosis. After thirty treatments, if no improvement has occurred, the referring physician and the physician in charge of the physical therapy department should make a joint examination of the patient and consider what further measures should be taken.

**RECORDS AND FILING.**—Every hospital usually has its own method of keeping and filing records.

The system used in the municipal hospitals of New York City is probably as simple as can readily be devised and as comprehensive as needful.

**REQUEST FOR PHYSICAL THERAPY.**—The first record is filled out by the referring department giving brief history of case diagnosis and X-ray findings, if any, and is signed by the referring doctor on the upper half of the record; the lower half is to be marked "Physical Therapy Department" and to be filled out by the physician in charge of that department, designating the kind of treatments to be given and how often. Spaces are left in which to record the total number of treatments given and the result obtained on completion of treatments.

This record is to be filed in the Physical Therapy Department under the name and hospital number as the permanent record of the case.

**HOSPITAL RECORD SHEET.**—Second, a record sheet of the same size as the case records of the hospital—designated as physical therapy record and containing complete record of kind and number of treatments given and results obtained—to be sent to the referring department and attached to the case record of the patient on completion of the case.

**DIAGNOSIS RECORD.**—Third, a separate record should be kept of all cases treated in the physical therapy department and listed according to diagnosis, giving kind and number of treatments and results. This record will be found exceedingly useful in preparing reports of results obtained in any given type, in comparing relative value of various methods of treatment and as a record of the number of cases referred from the various hospital departments. This record should be kept in a book on file in the physical therapy department.

Having briefly sketched the organization of a physical therapy department, the author will now try to indicate the relationship which should exist between the hospital staff and the physical therapy department.

The physical therapy department is not to be considered as the spare room in which any and every form of disease and disability that has resisted the usual modes

of treatment can be deposited and forgotten, but as an adjunct, a means of combining the usual methods, including physical therapy; and this cooperation may, and in many cases will be the determining factor in the recovery of the patient. For example, cases of thrombo-angiitis obliterans which so often end in gangrene and amputation should not be shunted into the physical therapy department for treatment two or three times per week or even daily treatment, but should remain in the wards, and the affected parts maintained at a constant temperature two or three degrees above skin temperature and proper medical methods continued. Cases of osteoarthritis, whether of the productive or destructive type, are benefited by physical therapy. Rheumatoid arthritis is a distinct disease and should have medical and surgical treatment as well as physical therapy. Fracture cases should not be deprived of the benefits of physical therapy for weeks. The director of physical therapy is not so much concerned with the solution of continuity of a bone, as with the pathology caused by the traumatism to the soft tissues incident to the fracture.

**EARLY REFERENCE DESIRABLE.**—If these cases are referred to the physical therapy department at the earliest possible time the surgeon and the physical therapist deem advisable, it may be possible to prevent the exudate, which invariably occurs at the site of such injuries, from becoming organized to a greater extent than requisite for the formation of callus.

Much of the loss of function in fractures is due to fibrosis of exudate interfering with the normal play of muscles in the affected part. And much of the pain suffered is caused by pressure of such organized exudate on the nerves involved.

These cases can be readily treated in the wards, and thus much time can be saved in the restoration of normal function.

Massage and heat can be used in many cases as soon as the fracture has been reduced. Plaster casts may be applied in two sections so that either the upper or lower half may be removed for treatment. Even when a limb is in a traction frame, such treatments can be given. In compound fractures where sections of the cast are cut away for drainage, actinic rays applied stimulate granulation and, if the wound is infected, will aid in its sterilization. Especially in fracture cases that are slow in the formation of callus, actinic rays

applied to the entire body usually stimulate the process and hasten bony union. Likewise osteoporosis can sometimes be stopped by the same means.

In gallbladder cases where there is dysfunction, as shown by the liver function test,—and the author is aware that the dye test does not always show the true degree of dysfunction even if it be present, as enough liver cells may be working to eliminate the dye—but, if marked dysfunction is shown, then diathermy is of value, even a temporary restoration of normal function lessening operative danger. These are but a few instances in which the surgeon and the physical therapist may cooperate. Such cooperation with the medical staff is often equally important. In anemic conditions, for example, other than pernicious anemia, actinic rays are of unquestioned value.

In rickets they are curative, and in tuberculosis of the skin and of the bones and intestines, they should always be used as an adjunct to the medical treatment indicated.

In pneumonia, diathermy causes respiratory movements, slows and strengthens the heart action, and has a general sedative effect; the patient usually sleeps after a treatment; and in the majority of cases recovery is by lysis rather than crisis. In bronchopneumonias which fail to clear up in a reasonable time diathermy will usually hasten the process.

In the rhinological and otological departments of the hospitals the director of physical therapy at times can be of great assistance. A case of chronic otitis media that has been under treatment for months can very often be cured by one or two ionizations of the canal with a 2 per cent solution of zinc sulphate.

**HYPERTENSION**—The treatment of persistent hypertension by autocondensation in cases that have not reached the stage of sclerosis of the arterial system and the coincident changes which occur in the kidneys, is of the utmost importance. If these cases are referred to the physical therapy department as soon as diagnosed by the medical staff, the hypertension can be reduced and a relatively normal blood pressure maintained. As hypertension is one of the principal causative factors in cardiovascular diseases, the importance of its early recognition and treatment cannot be overemphasized. One should always

have lues in mind as a possible causative factor, and if accurately diagnosed, should resort to the efficient new electrically induced fever treatment.

Cooperation between the gynecological and the physical therapy departments will do much to restore normal conditions in women suffering from pelvic diseases. The majority of these cases are particularly amenable to physical therapy measures. Also in postoperative cases with adhesions which cause pain much can be done.

The use of actinic rays in diseases of the skin has proved its value in many instances, for instance tuberculosis lesions, herpes zoster, erysipelas, impetigo contagiosa, seborrhea, pityriasis rosea, acne, and in some cases of mycotic and parasitic origin.

Last winter an outbreak of impetigo occurred in the obstetric division in Fordham Hospital, every baby becoming infected. Fortunately it was quickly controlled. A quartz lamp was hung from the ceiling, the babies placed on blankets on the floor, cart-wheel fashion, and thus radiated. In less than three weeks all cases were discharged cured, the ward thoroughly disinfected and reopened for service.

Cooperation with the neurological department will be a fruitful field in which to demonstrate the value of physical therapy methods. Considerable advance has been made in the last few years in the use of thermal units to produce artificial fever in various neurological conditions and some striking results have been obtained. The treatment of paralysis following anterior poliomyelitis depends largely on physical measures, exercise in warm baths, the use of sinusoidal currents for muscle and nerve stimulation and corrective exercises.

In this connection should be mentioned a condition that often occurs when treating cases of paralysis in the hospital wards. The best efforts of the physical therapist can be neutralized by an overzealous nurse who insists that the bed clothes be tightly drawn across the foot of the bed and firmly tucked in. When conduction between the

motor nerves and the muscles affected is just beginning to reestablish itself, to bind down the legs and feet so that any effort at voluntary motion is impossible, is certainly deplorable. Demand should always be made that an "L frame be placed under the bedding so that the slightest effort at voluntary motion will be unhindered by either the weight or pressure of the bedding.

#### DISCUSSION

DR. LEE A. HADLEY: There is very little to add except perhaps to mention the fact that the physical therapy department in a hospital offers a laboratory for clinical research and an opportunity to further the solution of some of the problems which confront this branch of medicine.

One of the problems which has occupied our interest at the Syracuse Memorial Hospital is the development of a technic for recording posture by photographing directly on to bromide paper combining the features of a silhouette and a direct photograph. The latter gives a record of the contours of the body. The patient stands before a black screen, 1,500 watts of light are used, with exposures of three or four seconds. Four pictures are made on a single sheet of five by seven bromide paper showing the patient anterior, posterior and two lateral views; one lateral in the patient's habitual relaxed position and the other in as proper a position as he can be made to assume. We have found that these photographs constitute an excellent record both before and after treatment and stimulate cooperation in the following out of exercises. The cost is less than three cents for each sheet containing four exposures.

Another problem which has occupied our attention consists in the radiation of certain substances to be used as dressings for wounds. Following out some of the work which has already been done petrolatum, mineral oil, olive oil and lanolin were radiated with an air-cooled quartz light. It was found that these substances were capable of taking up and again emitting radiation, the quantities increasing with the substances in the order named, that is, the lanolin gave off a much stronger radiation than the petrolatum. This radiation was invisible and was both taken up and emitted through the glass of the petrie dish covers. It seemed to be just as strong after one hour of radiation as after three hours. The power of radiation appeared to be retained by the substances for a period of weeks.

These are two relatively minor problems but indicate how the physical therapy department of a general hospital may be utilized in a study of some of the problems which confront us.

447 FT. WASHINGTON AVE.

Aroused by the hostile or indifferent attitude of some legislators toward the profession, the Tennessee State Medical Association has created a committee to organize the doctors throughout the State and to effectively contact candidates for governor and the legislature with a view to determining their attitude on issues affecting

medical matters. Already 68 of the 95 counties in the State have been organized. In previous sessions of the Legislature other well-organized groups have made fun of the political impotency of the doctors. Henceforth they will "stand foursquare on well-established principles and fight like men to the bitter end."



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## EDITORIALS

### New York State Underwrites Milk Campaign

At the invitation of Governor Herbert H. Lehman, about five hundred citizens from various parts of the state attended a luncheon conference at the Ten Eyck Hotel, Albany, on Thursday, July 12th, to discuss the promotion of the use of milk in New York State. A bill advancing a fund of \$500,000 (to be returned by means of a tax of one cent per 100 pounds shared equally by producer and distributor) to promote the consumption of milk in order to improve the wellbeing of the people of the state and to further the prosperity of the milk industry was passed during the last session of the Legislature and signed by Governor Lehman on May 24th, 1934. The luncheon conference was held to aid in carrying out the purpose of this legislation and was attended by groups representing business, industrial, religious, and educational life, and social, economic, political, and health activities, in addition to those directly concerned with the milk industry. Dr. Bedell, President of the Medical Society of the State of New York, Dr. Farmer, Chairman of its Committee on

Public Health and Medical Education, and Dr. Lawrence, the Executive Officer, were among those invited to the Governor's luncheon.

Mr. Frank E. Gannett presided at the conference and the speakers included Governor Lehman, Mrs. Anna Steese Richardson of the Woman's Home Companion, Mrs. Frances H. Blake, President of the New York State Congress of Parents and Teachers, Commissioner Baldwin of the State Department of Health. All speakers emphasized the decrease in consumption of milk in the state, the effects of this on the economic life and health of the people and the advantages to be gained from a state-wide advertising campaign to promote the sale of milk. After the luncheon, ten groups, each representing special interests, held conferences in various committee rooms of the Capitol Building, for the purpose of more efficient discussion of the various phases of the project under consideration.

Members of the medical and nursing professions met in a group with welfare and health officers, and others interested in these fields. A desire to cooperate in the state's plan to increase the consumption of milk was generally expressed. The physician's interest in milk as a necessary food, and his efforts to induce all to use adequate amounts was generally recognized. It was pointed out that the physician could do a great deal of missionary work in the present campaign, by emphasizing these facts at this time to his patients.

The state-wide campaign will consist of three parts:

1. Advertising milk as a commodity.
2. Promotion of the purpose of the advertising campaign through the efforts of various organizations and groups.
3. Publicity from several state departments on milk from various standpoints.

It would seem that all physicians should be acquainted with the objectives of the state's plan. The physician's aid in the campaign will largely be within the second part noted above. He should lend his efforts to promote the adequate consumption of milk for economic as well as health purposes.

### Time for Action

President Roosevelt's appointment of a cabinet group to study social reforms during the summer and fall is a clear enough warning signal to those who will be affected by the socialization of medicine. It is, in fact, impossible to mistake it. The committee, we are informed in the Washington dispatches, is "to formulate, with the assistance of expert advisers, a program for submission to Congress, to States, and to governmental subdivisions." And what will their program include? The White House statement leaves us in no doubt whatever. It says that "facts will be gathered and analyzed with regard to unemployment compensation, old-age pensions, workmen's compensation, *health insurance*, mothers' pensions, *maternity benefits*, and insurance against the special hazards of self-employment in small business and agriculture."

The imagination can hardly conceive a more formidable effort to force through Congress, through the state legislatures, and even through the city and town governments (the "governmental subdivisions") a program for the socialization of medical care. The cabinet members appointed to this committee are well known as favoring the socialization of welfare measures. They are to be assisted by an advisory council of fifteen to twenty national leaders in the fields of labor, social welfare, etc., and we can hardly think that an advisory council will be chosen who are hostile to the avowed aim of the plan. The result of their deliberations, then, can be well foretold right now. They will formulate a program of health insurance, and all the power of the national government will be put behind it to enact it into law. One year from to-day may see it a fact.

True, hearings will be held, "to receive the views and reactions of various groups," and "the results of these hearings, together with advice and counsel, will be handed to the President's committee for use in formulating its program," but how much attention they will pay to critics opposing their socialization program may well be questioned.

The final fate of the drive to socialize medicine, among other things, will rest in the hands of Congress, and the entire

House of Representatives and one-third of the Senate will come up for reelection this fall. Before election is the time when the representative of the people is most sensitive to the wishes of the voters of his district. Later, safely elected, the ice of indifference is apt to encrust the waters of sympathy.

In other words, this is the time for the leaders of the county medical societies and other medical organizations to tell the members of Congress, now home from Washington, why the socialization of medicine is ruinous to the profession and leads to a low-grade, inferior medical service to the public. A do-nothing policy, a policy of waiting for others to act, will be fatal. When insurance groups have been formed with streams of money flowing into a central treasury under the control of political appointees, with doctors hired by the year in the same way that school teachers are now, and taking their orders from petty officials ignorant of the rudiments of medicine, then it will be too late to protest. Events are moving swiftly. We cannot and do not believe that this country will embark upon a medical experiment that is contrary to the wishes and interests of the medical profession, but if the profession is silent or inactive, it has only itself to blame for anything that may happen. Now is the time to act.

### Health on the Air

A strange jumble fills the air these summer evenings—jazz, grand opera, beauty hints, cookery, baseball scores, farm talks, "Honeyboy and Sassafras," "Three Little Funsters," and advice on health. Much of the program, of course, as the saying is, goes in one ear and out the other, but who can calculate the effect of the continuous stream of health advice that is going out, day after day, to our listening millions? One day's program, taken at random, has three health broadcasts, not counting the talks on food and psychology and the musical numbers that disguise medical advertising. No feature stays on the air programs long if it does not show evidence that people are listening to it, so we may be sure that the nation has its ear

at the radio and is vastly interested in hearing about its health

Here is a situation that demands our earnest attention. Others are already awake to it. Men who chase the dollar with little or no thought of ethics, who are "busily engaged in misleading the public interest in health for private profit" are awake to it. That outspoken phrase was used by a speaker at the Congress on Medical Education in Chicago in February, and he went on to say that the handwriting on the wall warns the physician that he must take up the work of health education if he is to save the public from the fruits of its own folly, and if he is to "retain or regain leadership" among guardians of the people's health.

The gravity of the matter is at once evident to anyone who takes the trouble to read the resolutions adopted by the House of Delegates of the American Medical Association at Cleveland in June. These resolutions note that the various broadcasting companies are permitting the exploitation of many drugs, preparations, "patent medicines," and so called cures over the radio, some of them of merely dubious value and some actually dangerous in the hands of the layman. The symptoms described in these radio broadcasts may indicate serious conditions that call for study by a competent physician to insure the correct treatment before the disease reaches an advanced stage, but the listener is assured that a bottle of this or that nostrum will make all right.

The Federal Radio Commission controls broadcasting and a copy of the American Medical Association's resolutions was sent to it, protesting against the continuance of this misleading and mischievous medical education. Copies were also sent to all members of the Congress and Senate "so that they shall be thoroughly informed of this menace to the health of our citizens, and that they be urged to pass necessary laws to eliminate these dangers."

How much effect this will have on Congress is frankly problematical. To suppose, too, that the broadcasting companies will, in a burst of public spirit, spurn the money of the nostrum makers and banish

them from the air, seems a bit overoptimistic. But the medical societies can do something else, and, in fact, they are doing it. They can oppose bad medical education with good medical education. The radio is being employed widely by organized medicine. We all know the weekly broadcasts of the American Medical Association, which cover the country on a coast-to-coast network, but all may not be aware that at least seventy state district, and county medical societies broadcast on regular weekly schedules with material furnished by the Bureau of Health and Public Instruction of the American Medical Association. Besides these, others use their own material, and some medical societies use the air occasionally, so that it is calculated that from 125 to 150 medical societies are broadcasting health talks, and virtually every radio set in the land is within the range of the voice of organized medicine.

It is hardly necessary to speak of the vast amount of health material spread upon the pages of the press. Some of the county medical societies are doing a fine work in supplying this matter to their local papers. Speakers, too, are provided to address lay meetings. Taken altogether, we have clear evidence here that the American public is going health-minded in a big way. It presents a golden opportunity to the profession to aid the public health and at the same time to teach correct medical habits and practices to vast numbers found by research to be not receiving medical care. Opportunity is opening wider and wider to the message of health. If we cannot close the channels of the air to the conscienceless exploiters of the sick, let us fill those channels with truth, and trust the intelligence of the public to make the right decision.

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A speaker at the recent annual meeting of the South Dakota Medical Association remarked crisply that the history of all schemes that have been tried both in this country and abroad whether they be State Medicine, National Health Insurance, Workmen's Compensation or other show that they all become more or less of a "racket" to the detriment of both the patient and the physician, the benefits and profits invariably going to the nonmedical racketeers who wax fat on the misfortunes of the patient and the hard work of the physician."

## The Medical Society of the County of Rockland

The *Summer Meeting* of the Medical Society of the County of Rockland was held at the Rockland Country Club, Sparkill, on Wednesday afternoon, June 20th. About 40 members of the Society were present.

Dr. William R. Strutton, Pathologist of the Rockland State Hospital, was elected to membership.

The principal address of the afternoon was given by Dr. Samuel J. Kopetzky, of New York City, who is speaker of the House of Delegates of the Medical Society of the State of New York. Dr. Kopetzky's subject was "The Implications of Socialized Medicine."

Dr. Kopetzky pointed out that it was impracticable to socialize medicine in a capitalistic country and that the only way the costs of medical care could be lowered is by "mass production" as in the business world, but this means lowering the quality of medical service. As an example, the state doctors in Europe may examine and treat as many as 50 to 75 patients daily, and as soon as State medicine is established, politics will enter in, resulting in inferior appointments. In socialized medicine the intimate contact of family and physician is lost. Dr. Kopetzky also pointed out that since the institution of socialized medicine in European countries there has been no reduction in the death rate and that research has practically ceased since there is no longer an incentive.

Mr. A. R. Decker, a journalist of Stony Point, who spent about twenty years in

Europe, pointed out the unsatisfactory workings of the practice of medicine controlled by the State. Under the insurance plan, as carried out in many countries of Europe, the government selects the physician for the patient. In speaking of conditions in this country, Mr. Decker felt that the indigent cases should be cared for but, in his opinion, the physician should not be taxed twice; he pays his taxes as other citizens in hospitalizing such cases, but he should not be asked to give his services free in treating them.

Dr. George A. Leitner who recently attended the annual meeting of the American Medical Association, as a delegate from the Medical Society of the State of New York, held at Cleveland, Ohio, from June 11th to 15th, introduced a resolution which was unanimously passed by the Medical Society of the County of Rockland, declaring in favor of the ten-point declaration policy of the American Medical Association for guidance of physicians and the public in considering any changes in the practice of medicine.

The following resolution was presented and passed: that "the Medical Society of the County of Rockland pay from the funds of its treasury the sum of \$150.00 to the Treasurer of the Bureau of Compensation-Arbitration, consisting of the counties of Ulster, Dutchess, Putnam, Orange, and Rockland, to defray the expenses for one year's operation."

WILLIAM J. RYAN, M.D.

Secretary

# Books

## BOOKS REVIEWED

*The Single Woman.*—A Medical Study in Sex Education. By Robert Latou Dickinson and Lura Beam. Octavo of 469 pages. Baltimore, Williams & Wilkins Company, 1934. Cloth, \$5.00. (Medical Aspects of Human Fertility Series, issued by the National Committee on Maternal Health, Inc.)

More of Dickinson's marvelous case records—1,078 histories of single women are considered—an expedition into a territory almost unknown. The authors' interest is in the sexual as it should influence health and treatment. In the first chapter woman is shown us in the perspective of the nineties when her organs "served apprenticeship to modesty until they reached biological ends."

Sociologically, psychologically, medically—although the authors say that in the strictest sense it is not medical—the book is interesting and instructive. The gynecologist will appreciate it. We may not all agree as to the value of this book, but that there are a great many lessons to be learned from it no one can deny. Dickinson's case records should be a source of inspiration to every

serious gynecologist. They are more than interesting.  
CHARLES A. GORDON.

*The Modern Treatment of Syphilis.*—By Joseph Earle Moore, M.D. Octavo of 535 pages. Springfield, Ill., Charles C. Thomas [c. 1933]. Cloth, \$5.00.

This book is a storehouse of information concerning all phases of the therapy of syphilis. The text is clear, concise and very readable and is intended for all clinicians who have to do with the treatment of the dread disease. The experience of the author together with that of his confreres is based upon a twenty-year out-patient venereal service at the Johns Hopkins Hospital.

The statistical tables throughout the work are a valuable adjunct to the text. As the author states, "the physician must have a basic knowledge of the biology, clinical course, and pathology of syphilitic infection." "Complex situations often arise and the treatment of the disease becomes an art which only those  
(Continued on page 750)

# Medicolegal

LORENZ J. BROSNAN, ESQ.  
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## Death by Accident or Disease?

A case recently decided by the highest court in this State will illustrate the perplexing problems of a medical nature which frequently are the source of litigation. In that case the question at issue was whether in legal contemplation a certain man died by reason of accidental injuries or by reason of disease.

A certain M., almost 70 years of age, carried a policy of accident insurance whereby the company agreed to pay a certain sum to his wife in case he should die as the result of bodily injuries accidentally sustained "directly and independently of all other causes." The insured was a man of very active and energetic nature and to all outward appearances he was in excellent health. In the course of his work, while driving his automobile along a country road at night, he crashed into the rear of an unlighted motor truck which was parked on the highway. The impact was a heavy one causing the heavy truck to be pushed some 20 feet and demolishing the smaller car. In the collision M. struck his chest against the steering wheel of his car. He was found lying on the roadside bleeding from his nose and mouth and complaining of great pain and agony. He was taken directly to a hospital and made particular complaint of pains in the chest and groaned with pain as he breathed. Morphine was administered to him to relieve the pain and the superficial wounds were closed. X-rays were taken the same night which showed the result of a violent blow upon his chest, to be separation of the third right and left costal cartilages. The doctor who attended him found that he was suffering from a moderate degree of shock. M. remained a patient at the hospital, the pain gradually cleared up and after five or six days his breathing was fairly normal, causing him little pain. The lacerations that he sustained substantially healed. There were no other evidences of any injuries.

The patient, however, never left his bed in the hospital and died about three weeks after the accident. During the last ten days he was somewhat irrational and for about

three days prior to his death he was in a state of coma most of the time. One of the doctors who attended him described the conditions leading up to his death as follows:

"As a result of the injury to his chest there was a resultant shock. Very soon after this shock was present there were increasing evidences of trouble in his intestinal tract and with his urinal tract. The poisons which were absorbed as a result of this failure of elimination produced the poisons in his system, the blood absorbing them and carrying them to all parts of his body. As a result of this poisoning all of the organs in the body, of course, were more or less weakened, their function was lessened and resulted ultimately in his death."

The company with whom M. was insured refused to consider his death the result of bodily injuries accidentally sustained independently of other causes and a suit was brought to enforce payment of the amount of the accident policy. It was brought out upon the trial that the immediate cause of the death was nephritis. The death certificate had given the preliminary cause of death as nephrosclerosis, arterial type. It was shown that M. had been suffering from chronic and progressive nephritis for at least three years. An autopsy which had been performed showed that M. had suffered from chronic appendicitis, chronic inflammation of the prostate, that the left coronary artery was thickened, narrowed and calcified indicating hardening of the arteries, and that there were certain adhesions about the intestines, all in addition to the condition of nephritis. The doctors who testified upon the trial stated that all of these conditions which had existed prior to the accident, had, coupled with the accident, caused death. The medical testimony in the case made it clear that, except for the accident, none of the conditions from which the deceased suffered would have been likely to have caused his death in a short period of time, and that he might have lived on for some years.

At close of plaintiff's testimony the complaint was dismissed by the trial judge upon the grounds that the proof showed that death had not been caused solely through accidental means. The plaintiff

appealed to the Appellate Division and that court adopted the view that the plaintiff was entitled to recover on the accidental policy for the reason that the deceased's ailments would not have produced death at the time of the accident nor probably for years, except for the shock which the deceased suffered as a result of the collision. The insurance company, however, carried the case to the highest court of this State and the said court by a four-to-two decision reinstated the ruling of the trial court.

The Court of Appeals decided that under a policy of insurance phrased in such terms as the one in question had been, "the insurer may be relieved of liability if an idiosyncratic condition of mind or body predisposing the insured to injury is so acute as to constitute a disease."

The court stated the rule which permits an insurance company to avoid liability on an accident policy where diseases contribute to the cause of death as follows:

"The disease or the infirmity must be so considerable or significant that it would be characterized as disease or infirmity in the common speech of men . . . of such quality or degree that in its natural and probable development it may be expected to be a source of mischief."

In deciding that the plaintiff had failed to establish her case against the insurance company the court said:

"The burden was on plaintiff to show that the idiosyncratic condition of M.'s body, upon which the accidental injury impinged ultimately to cause death, was not a disease within the meaning of the established rule. The burden was not met. Nephritis existent for at least three years, chronic and progressive, may not with any fitness of language or with any sense of reality be described as a mere predisposing tendency. It is a condition which in its natural and probable development may be expected to be a source of mischief, and so a disease; and if it were mentioned as inflammation of the kidneys instead of nephritis, the ordinary man in his common speech would unquestionably call it a disease."

Clearly the problem before the court was difficult of solution and it may seem that the result reached was a harsh one. However, the decision was probably the only proper one under the circumstances for if the line were not drawn, it can readily be seen that there would be no limit to the abuses which would follow an accident in every case where a person carrying an accident policy suffered death, regardless of the actual cause of that death.

### Death of Infant Following Delivery

A woman about 26 years of age came to the office of Dr. B. and informed him that she was pregnant and desired to be confined. Upon examination it was disclosed that she was about six months pregnant and normal. The doctor saw her several times thereafter, and finally one night about three months later she called at his office at 11 P.M. and stated that she was in labor.

The doctor ordered her into a hospital and upon examining her failed to find the fetal heart and advised immediate delivery. Under a general anesthesia a female child was delivered with low forceps. The child was not breathing and was cyanotic. Artificial respiration was given using oxygen and applied warmth. The placenta was expelled intact normally. The child was revived sufficiently to breathe, but she could not retain nourishment. A pediatric specialist was called, but the child died two hours later.

An action for malpractice was brought against Dr. B., and after extensive negotiations with the attorney for the patient, and as the case was about to go to trial, the suit was dropped, thereby exonerating the doctor from the charge of malpractice.

### BOOKS REVIEWED

(Continued from page 743)

with wide experience should attempt to practice." The work of Moore may be aptly called a clinical encyclopedia and is, in the reviewer's opinion, the most valuable contribution in English on this subject since the work of Stokes.

#### AUGUSTUS HARRIS

Bergey's Manual of Determinative Bacteriology.—By David H. Bergey, Fourth Edition. Octavo of 664 pages. Baltimore, The Williams & Wilkins Company, 1934. Cloth, \$6.00.

This is a new edition of the volume absolutely essential to the bacteriologist in any field. It is the ultimate standard for classification and is the only modern reference of its scope for identification. There have been added since the last edition (1930), fifty new species and one new genus, together with new descriptions and amplifications covering three genera and one order. The efficient working arrangement of

material and the clearly concentrated tabulations of data are practically faultless.

IRVING M. DERBY

Industrial Health Service.—By Leverett D. Bristol, M.D. 12mo. of 170 pp. Phila., Lea & Febiger, 1933. Cloth, \$2.00.

The author of this book shows very definitely that he is well versed in the art of industrial medicine. He has covered the entire field in a very clear and comprehensive effort to portray the problems and the solutions that beset both employer and employee from a health standpoint.

This book should be a guide for physicians in industry and should be particularly enlightening to those executives who are interested in the maintenance of employee health.

J. J. WITTMER

ON THE RELATIONS OF THE INCRETA OF THE ADENOHYPOPHYSIS  
TO THE CLINICAL DISTURBANCES OF GROWTH, OF DEVELOPMENT, AND OF OTHER PHYSIOLOGICAL FUNCTIONSLEWELLYS F. BARKER, M.D.  
Baltimore, Md.

Though P. Marie, in 1886—less than 50 years ago—in his studies of acromegaly was, perhaps, the first to demonstrate the basis of a human disease in pathological changes in the hypophysis cerebri, it was not until after the opening of the new century that rapid progress began to be made toward a better understanding of the pituitary gland and its disorders. Babinski, in 1900, and Fröhlich, in 1901, reported cases of the type now designated dystrophia adiposogenitalis. Cushing and his associates in Halsted's clinic in Baltimore, by their vigorous clinical and experimental work gave a great impetus to hypophyseal investigation in the second half of the first decade of the century; their findings were summarized by Cushing in his *Harvey Lecture* (1910) and in the volume, entitled "The Pituitary Body and Its Disorders" (1912) and included reports on the first experimental production of the adiposogenital syndrome in animals and on the disturbances of carbohydrate metabolism that may be met with in hypophyseal diseases.

## ADENOHYPOPHYSIS AND NEUROHYPOPHYSIS

Anatomical and histological studies have revealed marked differences in the structure of the hypophysis in different animals and have shown its intimate relations to the hypothalamic region of the interbrain. The glandular part of the hypophysis as a whole is now spoken of as the adenohypophysis, whereas the posterior lobe is called the neurohypophysis. In the adenohypophysis of the nonpregnant adult human female, the chief cells forming about 50 per cent of all the cells are chromophobe; the other cells are chromo-

phile cells, the eosinophiles forming about 43 to 44 per cent and the basophiles about 7 per cent of the total number of cells; in males the proportion of eosinophiles is slightly less than in females (A. T. Rasmussen, 1933).

## INCRETA FOUND IN THE ADENOHYPOPHYSIS

Many chemical substances, apparently of hormonal nature, appear to be produced by the cells of the adenohypophysis. I shall mention only those concerning which we have data that support their significance.

1. THE GROWTH HORMONE.—This substance, shown by Evans and Long (1921) to be present in alkaline aqueous extracts of the adenohypophysis is necessary for the growth of young animals. In its absence, growth ceases. Administered in excess to a young rat or to a young purebred dachshund, it will give rise to gigantism. It is not excreted in the urine. There seems to be no doubt that it is a product of the eosinophile cells of the adenohypophysis. Recently (1933) Collip has obtained it in concentrated form ("Q extract") by concentrating bovine extracts of the anterior pituitary; in this form it is said to be absolutely free from the gonadotropic hormone, the thyrotropic hormone, and the adrenotropic hormone of the adenohypophysis. In animals treated with it, nitrogen excretion is quickly and markedly decreased; it appears to affect protein metabolism as much as it does calcium metabolism.

2. THE GONADOTROPIC OR MATURITY HORMONE.—As early as 1901 clinicians reported atrophy of the sex organs in certain patients with disease of the hypophysis

and in 1926 it was shown by experimental studies that implantation of anterior pituitary under the skin of young rats would quickly give rise to sexual maturity (Zondek and Aschheim; P. E. Smith); the effects in immature females were similar to the effects produced by the substances known as prolans and present in the urine of pregnant women, but the gonad-stimulating hormone of the hypophysis is not identical with prolans. This maturity hormone of the anterior pituitary is believed to be a product of the basophile cells (J. H. Biggart, 1933; E. J. Kraus, 1933).

3. THE THYREOTROPIC HORMONE.—In experimental animals, it was shown that removal of the hypophysis caused atrophy of the thyroid (B. Allan and P. E. Smith, 1915.) Clinical studies proved the existence of a low basal metabolic rate and of low specific dynamic action of protein in destructive diseases of the adeno-hypophysis. Convincing evidence of the existence of a thyreotropic hormone in the adeno-hypophysis was, however, first brought by L. Loeb (1931-1932) in this country and by M. Aron in Germany; it has recently been obtained in relatively purer form by Collip (1933). It is not identical with the adeno-tropic hormone nor with the growth hormone, but seems to have a specific effect upon the thyroid gland itself. Its chemical properties have been studied by Krogh and Okkels (1933). It is not known yet which cells of the adeno-hypophysis produce it. Injections of this hormone will cause hyperplasia of the thyroid of a hypophysectomized rat in about a week and will restore the thyroid activity to normal in  $2\frac{1}{2}$  months though the maximal effect is exerted in one or two weeks.

4. THE ADRENOTROPIC OR INTERRENOTROPIC HORMONE.—That the adeno-hypophysis produces a hormone that is essential for the welfare of the suprarenal cortex is shown by the fact that after experimental removal of the pituitary gland marked atrophy of the cortex occurs. Many of the animals sicken and die and Evans found that administration of Swingle's adrenal cortical hormone would not modify the decline, though he obtained dramatic improvement on administration of aqueous alkaline extract of the anterior pituitary, results that make him hopeful that if a more concentrated extract containing this "interrenotropic hormone" can

be obtained it may prove to be useful in the treatment of Addison's disease. The marked hyperinterrenalism that is seen in Cushing's syndrome (basophile adenoma of the pituitary) may possibly be due in part to overproduction by the adeno-hypophysis of this interrenotropic hormone in which event we might think of the basophile cells as the producer of the hormone.

5. THE HORMONE INFLUENCING FAT METABOLISM.—Evidence of the existence of such a hormone is seen (1) in the observation that lack of it is followed by obesity (some deny this) and lowering of the basal metabolic rate, and (2) in the fact that excess of it leads to increased formation of beta-oxybutyric acid (Anselmino and Hoffman, 1931). The hormone is said to be water-soluble and protein-free. It can be separated from the maturity hormone, the growth hormone, the lactogenic hormone and the thyreotropic hormone by ultrafiltration; it is present in the blood apparently only when fat is being burned.

6. THE HORMONE INFLUENCING CARBOHYDRATE METABOLISM (DIABETOGENIC HORMONE).—Cushing observed increased carbohydrate tolerance after ablation of the pituitary body. Later it was shown that hypophysectomized dogs exhibit an increased sensitivity to insulin (Houssay-Magenta, 1924) and that experimental pancreatic diabetes can be ameliorated by removal of the pituitary body, though if anterior lobe be then implanted, hyperglycaemia immediately recurs. Evans and his associates (1932) produced saccharine diabetes in normal dogs by giving them alkaline extracts of the hypophysis; these findings suggest that the diabetogenic hormone of the hypophysis is pancreatropic and may repress the functions of the islands of Langerhans of the pancreas.

7. THE LACTOGENIC HORMONE.—That the adeno-hypophysis produces a hormone (so-called "prolactin") that regulates the secretion of milk now seems to be certain. Though the hormone from the corpus luteum may be of importance for mammary development the studies of Corner, and more recently of Riddle, indicate that after the mammary glands have undergone development, the lactogenic hormone of the hypophysis is necessary for the stimulation of the secretion of true milk.



8. OTHER HORMONES PRODUCED BY THE ADENOHYPOPHYSIS.—Though the hormones already mentioned appear to be those of greatest importance, it is probable that the adenohypophysis is instrumental in the production of still others. Thus, it has been shown that extracts of human hypophysis given to frogs will darken their color by causing a spreading out of the melanophores of the skin (Ehrhardt) and that extracts of the pars tuberalis of the cat's hypophysis contain both a diuretic substance (Teel) and an antidiuretic substance (Atwell). Whether the hormones that are extractable from the posterior lobe and stalk (tonephin and oxytocin and the antidiuretic substance in pituitrin) are manufactured by glandular cells that have wandered from the adenohypophysis into the neurohypophysis is still under dispute; certainly these substances do not seem to be present in extracts of the anterior lobe. The intermediin present in large amounts in the pars intermedia of the bovine hypophysis (Zondek and Krolin) and which gives a red color to the skin of certain animals ("wedding dress") has been found to be present in the human adenohypophysis and may be very abundant as Berblinger has shown, in conditions in which the basophile cells are increased (e.g., in eunuchoid obesity, cancer of the liver, and uremia). This "intermediin" is not identical with the melanophore-spreading substance previously mentioned.

THE RELATION OF DISTURBANCES OF PRODUCTION OF THE INCRETA OF THE ADENOHYPOPHYSIS TO CLINICAL CONDITIONS (OTHER THAN GYNECOLOGICAL)

The writer wishes to emphasize the importance of care in the clinical use of the terms "hyperpituitarism" and "hypopituitarism," since we usually have to deal with conditions that are only partial rather than total hyper- or hypo-states. This is easily understandable now that we know (1) that there are three main types of cells in the adenohypophysis, (2) something of the relations of the increta to these types, and (3) something of the elective involvement of the types in certain diseases. It must be remembered, too, by all who attempt clinical interpretations that injuries to or diseases of the hypophysis cerebri may be accompanied by lesions in the adjacent portions of the diencephalon and that, sometimes, lesions of the latter alone may give

symptoms and signs that closely simulate those of certain hypophyseal diseases. Time will permit only brief mention of the more important pituitary syndromes and of the incretal disturbances probably involved in their production.

1. PITUITARY CACHEXIA (CACHEXIA HYPOPHYSEOPRIVA).—Since Simmonds (1914) first brought the anatomical proof that destruction of the anterior lobe of the hypophysis can be followed by a progressive and ultimately fatal cachexia, this condition has been called "Simmonds' disease" or "hypophyseal cachexia." More common in women than in men, it has developed most often as a result of embolic necrosis of the hypophysis occurring in the course of puerperal sepsis, though it may follow upon local hypophyseal hemorrhages, inflammations, or neoplasms. The condition is characterized by amenorrhea (in women), impotentia and testicular atrophy (in men), falling out of the hair, decrease in size of the organs (splanchnomikria), hypothermia, premature senility and, ultimately, emaciation with severe anemia. On account of the extensive destruction of the anterior lobe (involving all the chromophobe and chromophile cells) there would seem good reason to assume a deficiency of all the prepituitary hormones in this cachexia. Diabetes insipidus is not a part of the syndrome. In therapy the hypodermic administration of anterior lobe extracts should be tried (J. C. Brougher, 1933).

2. HYPOPHYSEAL DWARFISM.—A slowly progressive deficiency of the adenohypophysis setting in before puberty gives rise to "pituitary dwarfism" (Erdheim, 1916) or "nanosomia pituitaria." In a clinic held last year, I showed a patient illustrating the condition; good photographs of the patient accompany the report of the clinic in *Endocrinology* (17:647, 1933). Since the growth hormone and the gonadotropic hormone are both deficient it would seem certain that the hormones of the eosinophilic and the basophile cells are insufficiently produced, or that they cannot arrive at the sites of their activity (as for example, when a tumor of the craniopharyngeal duct separates the hypophysis from the diencephalon). The patients are not obese, the epiphyseal lines remain open, the bodily proportions remain child-like, and the sex organs and sex life remain underdeveloped, though the intellect may evolve normally.

3. **HYPOPHYSEAL INFANTILISM.**—The peculiar infantilism designated "ateleiosis" by Gilford (1911) was attributed to hypophyseal deficiency by Biedl. It is not to be confused with the faulty growth of hypothyroidism. In this hypophyseal infantilism the "upper length" of the body exceeds the "lower length," the pelvis remains infantile, the subcutaneous adipose tissue does not develop, epiphyseal closure is retarded, the genitalia remain infantile, and, later on, there is a peculiar premature senile appearance (progeria). The condition appears to be due to temporary anterior lobe deficiency occurring at about the time of puberty (H. Lissner). Improvement has followed the hypodermic administration of anterior lobe extracts. Evidently the effects of the increta of both the eosinophile and the basophile cells of the hypophysis are, for one reason or another, insufficient; a delayed ripening of the granular chromophile cells has been suggested as a possible basis.

4. **ACROMIKRIA (DYSTROPHIA OSTEOGENITALIS).**—This condition, first described by T. Brugsch (1927), is characterized by small acra, acrocyanosis, pains in the acra, moderate dwarfism, hypotrichosis, headache, and thirst; in females, there is amenorrhea. In some cases the skull is smaller than normal (probably with microcephaly). No autopsies seem to have been reported. The acromikria is believed to be due to insufficiency of eosinophile cell activity and the genital disturbances to insufficiency of basophile cell activity. The frequent association of polyuria and of obesity with the other symptoms would seem to point to complicating involvement of the nerve nuclei in the hypothalamus.

5. **GIGANTISM AND ACROMEGALY.**—These well-known conditions (one developing before, the other after epiphyseal closure) are now believed to depend upon excessive production of growth hormone by eosinophile cells in the hypophysis. Indeed, at autopsy, eosinophile adenomata are often found, usually in the anterior lobe proper, occasionally in the body of the sphenoid bone; if at autopsy no eosinophile adenoma be found at either of these sites, Berblinger emphasizes the importance of looking for one in the pharyngeal roof in which traces of hypophyseal tissue may remain and be the site of origin of the adenoma. It is to be emphasized, however,

that an increase of eosinophile cells in the hypophysis may occur without evidence of increased production of growth hormone as Wyeth has shown in his histological studies of the hypophysis in cancer. If signs of hypogenitalism accompany gigantism or acromegaly, one may assume the existence of an associated insufficiency of the gonadotropic hormone (perhaps because of pressure of the eosinophile adenoma upon the basophile cells). Occasionally, acromegaly is accompanied by enlargement and hyperfunction of the thyroid gland, a fact that has suggested the possibility that the eosinophile cells of the hypophysis may produce the thyrotropic hormone as well as the growth hormone.

6. **DYSTROPHIA ADIPOSOGENITALIS.**—This syndrome described by Babinski (1900) and more fully by Fröhlich (1901) is relatively common. It is characterized by obesity, genital dystrophy, and (usually) signs of intracranial tumor, though in the so-called Laurence-Biedl syndrome associated with disturbances of intellect and retinitis pigmentosa, there may be no signs of tumor either of the hypophysis or of the brain. Three forms are believed to exist: (1) that due to tumor or other disease of the adenohypophysis alone; (2) that due to interruption of the connections of the hypophysis with the interbrain; and (3) that due to injury of the interbrain alone.

Shortly before his death, W. Engelbach was testing the effects of the growth hormone of Evans upon patients presenting the symptoms of dystrophia adiposogenitalis.

7. **"PITUITARY BASOPHILISM."**—Recently, Cushing has described as "pituitary basophilism" a syndrome characterized by obesity of the trunk (not of the limbs), hypertrichosis, plethoric habitus with erythremia, purple striae on the chest and abdomen, high blood pressure, osteoporosis, kyphosis, and genital disturbances (amenorrhea in the female, impotence in the male). At autopsy, he found hypertrophy of the suprarenal glands and small basophile adenomata in the hypophysis. How much of Cushing's syndrome is due to the basophile adenomata and how much to the hypertrophy of the suprarenal cortex would seem as yet to be uncertain. Zeynek (1933) maintained that basophile hyperplasias of the pituitary are common without symptoms. Further studies of pituitary

basophilism and of Cushing's syndrome will be awaited with interest.

8. DIABETES INSIPIDUS.—In this disorder enormous quantities of urine (even 10 or 20 liters daily) of very low specific gravity are excreted; the kidneys are no longer able, without therapeutic intervention, to excrete a concentrated urine. The fact that injections of extracts of the posterior lobe of the hypophysis (pituitrin) exert a markedly antidiuretic effect in diabetes insipidus (especially if the salt intake be limited at the same time) is well established, but we do not yet know with certainty where this pituitrin is manufactured. Some have thought that cells from the adenohypophysis that have wandered into the posterior neural lobe make it; but extracts of anterior lobe have no effect upon the polyuria and there may be complete destruction of the so-called middle lobe without polyuria. Experimentally, injuries to the medulla oblongata, as well as to the corpora mammillaria or to the hypothalamus may give rise to the same type of polyuria.

Autopsies upon patients who have during life suffered from diabetes insipidus have revealed variable findings—sometimes diseases of the hypophysis (inflammations, tumors), sometimes lesions of the tuber cinereum or of other parts of the diencephalon. The view generally held at present is that some interruption of the correlation of the activities of the hypophysis with those of the interbrain must be responsible for the occurrence of diabetes insipidus, though even this view has been challenged because of observations that such interruptions are not always accompanied by polyuria. The whole matter of the pathogenesis of diabetes insipidus must therefore be regarded as yet undetermined. It is interesting that the disease may sometimes occur in families in a manner suggestive of an inherited anomaly (cf. Chester and Spiegel, 1933).

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# Symposium on Obstructive Uropathy

## OBSTRUCTIONS TO THE UPPER URINARY TRACT

FRANCIS N. KIMBALL, M.D.

*From the Department of Urology (James Buchanan Brady Foundation) of New York Hospital and the Department of Urology, New York City Hospital*

Urologists of today appreciate the delicate balance with which the urinary system is maintained and realize that if that balance is disturbed, impairment to health results. They are indebted to their colleagues, the physiologists, for knowledge of the functional activity of the kidney. Claude Bernard in his conclusions on the phenomena of life makes the following summation: "All the vital mechanisms, varied as they are have only one objective; that of preserving constant the conditions of life in the internal environment."

The urinary tract as one of those vital mechanisms maintains three important functions: (1) maintenance of the osmotic pressure of the blood at a constant level; (2) excretion of all organic constituents of food which are not required by the body; and (3) excretion of waste products of nitrogenous metabolism, particularly urea and uric acid.

After the urine has been secreted by the tubuloglomerular structure of the kidney it is discharged into the minor calyx. As each calyx fills, contraction occurs and the muscular band at the infundibular portion relaxes to allow the contents to be emptied into the major calyces and the pelvis. Similarly the major calyces and pelvis become filled to a certain degree of distention at which time peristalsis begins, causing the muscular ring at the ureteropelvic junction to relax and allowing the urine to pass into the ureter from which it is discharged into the bladder. In turn the bladder is filled to a certain degree of distention when contraction takes place and the vesical sphincters relax to allow the urine to be voided through the urethra.

Thus the urine passes through five separate conduits: the calyces, pelvis, ureter, bladder, and urethra, a coordinated process, which is accurately controlled by the sympathetic nervous system. Any mechanical change in the pressure within the urinary system will alter the conditions under which the kidney functions and will increase the difficulty on the part of the kid-

ney, in excreting solid substances. Waste products are then retained in the body producing the phenomena of uremia.

**ETIOLOGY.**—The causes of interference with drainage of the upper urinary tract are many and may be located anywhere from the calyces to the ureterovesical orifice. The actual pathology may be located within the lumen of the drainage canal, or it may be outside of the canal and produce pressure upon it.

The methods of urological diagnosis now at our disposal have demonstrated the frequency with which obstructions are encountered above the bladder and the great variety of anomalies found in the kidney and ureter giving rise to distortions of the urinary conduits.

These causes may be grouped into two general groups which may be called intrinsic and extrinsic, respectively. The intrinsic group includes the following:

1. Pyogenic infections.
2. Tuberculous infections.
3. Inflammation of renal pelvis with blood clot or parasite.
4. Strictures of: calyx; ureteropelvic junction; iliac portion of ureter; midpelvic portion of ureter; ureteral orifice; inflammatory stricture of ureter.
5. Calculus in: calyx causing partial hydronephrosis; pelvis; ureter.
6. Tumors of: kidney; pelvis; ureter; ureteral orifice.
7. Anomalies of: kidney; pelvis; ureter.

The extrinsic group includes the following:

1. Aneurysm of renal artery.
2. Aberrant vessel or fibrous band at ureteropelvic junction.
3. Adhesions: about ureter causing a kink in nephroptosis; resulting from abdominal or pelvic inflammatory disease; resulting from seminal vesiculitis; cicatricial stricture inflammatory or postoperative.
4. Tumors producing pressure on ure-

ter: abdominal; pelvic; pregnancy; diverticulum of bladder; calcified lymph nodes.

**PATHOLOGICAL PHYSIOLOGY.**—The results of obstruction upon the kidney are practically the same regardless of the place at which the obstruction occurs. The anatomic and functional changes will vary in their relative importance, depending upon the distance that the obstruction is located from the kidney. In upper-tract obstructions the pressure effects come on more acutely and the anatomic changes make their appearance at once. The functional impairment is so slight that it usually causes no immediate symptoms.

Obstructions may be partial or complete and in either case may be constant or intermittent. This results in a progressive hydronephrosis with its ultimate effects, hydronephrotic atrophy.

Hinman and his associates have shown that hydronephrotic atrophy is a type of the degeneration produced by pressure and anemia; that there is a direct relationship of urinary back pressure to the blood supply, the productive factor in dilatation and atrophy. In a closed hydronephrosis, the contents are neither cumulative nor stagnant. The change is continuous. Urine is being secreted by the kidney and the excess is removed by an active reabsorption which occurs through pyelovenous backflow.

Some of the mechanical effect may be better understood if we consider the blood supply to the kidney. The renal artery divides as it reaches the hilum into several branches varying in numbers from three to five entering the kidney substance independently. These branches partially surround the renal pelvis. The progressive dilatation of the pelvis will compress and gradually strangle the arterial supply. In a similar manner there is a dilatation of the calyces and ultimately the collecting tubules. Pressure is exerted upon the peritubular capillary plexus and it is deprived of its blood supply. These capillaries deprived of their blood supply degenerate first, the less injured with some blood supply are able to maintain some degree of secretion; thus the atrophy progresses.

As the pelvic dilatation progresses the calyces which are in direct communication with the pelvis are subjected to the same pressure, become widened and the papillae flattened until their orifices are marked by slight central elevations, with radiating

blood vessels and tubular markings. The pyramids lose their radial appearance as the tubules are forced to lie upon the surface beneath and parallel with the capsule. The cortex becomes very thin and in due time the unequal blood supply produces areas of different thickness giving an irregular appearance to the gross kidney. The process may continue until the whole kidney is reduced to a multilocular sac with patches of thin or thick renal cortex distributed in an otherwise thin wall of sac. The remaining cortex will show areas of focal fibrosis with infiltration of lymphocytes and plasma cells. The glomeruli will vary in size, some may be converted into fibrous nodules, others surrounded by a thickened fibrous capsule. Renal tissue is reduced to such a small amount that restitution of function is impossible.

The intrarenal and extrarenal pelvis produce differences in the gross appearance of a hydronephrotic kidney. In the former the pelvis is partially surrounded by the more resistant renal tissue so that in extreme dilatation there is a radial enlargement with the remaining renal tissue spread out over the surface of the sac. In the latter there is a less resistance offered so that the pelvis dilates in extreme cases to a large sac with a small amount of renal tissue in one area of the periphery.

The degree of functional impairment will vary in different cases to the degree of hydronephrosis present. We have seen a kidney with a considerably dilated pelvis show a normal function. This condition will be found in a hydronephrosis which is characterized by recurrent attacks of pain and swelling with intermissions which tend to preserve the renal function. An obstruction which is progressive will show functional impairment before marked dilatation is evident. A hydronephrosis of a week to ten days' duration resulting in a purely functional disturbance undergoes complete restitution to normal when the obstruction is removed provided no permanent structural change in the kidney has occurred. On the other hand, a hydronephrosis of much longer duration requires the stimulus of compulsory function, which must be gradually applied. Renal tissue is stimulated to greater activity resulting in renal hypertrophy, when there is a gradual increasing demand for more work—a physiological principle which is well known to all of us: activity is essential to development and inactivity encourages atrophy.

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arrested. A small stone may wander about the pelvis to rest in its most dependent portion, or it may become impacted in the neck of a calyx or the ureteropelvic junction. If impacted in the calyx, it may grow to an enormous size causing marked destruction of the kidney before obstruction occurs. When arrested in the pelvis, a partial or incomplete hydronephrosis may result which, as mentioned before, may become very large. Should the obstruction be complete and sudden, the resulting hydronephrosis will be smaller. We must remember that stone in the kidney is a destructive process which is greatly augmented by infection; therefore every effort should be made to conserve the function of renal tissue.

Ureteral stone may be arrested either temporarily or permanently at one of the normal constricted areas of the ureter, namely; opposite the iliac artery, mid-pelvic portion or in the intramural portion. If arrested in any of these areas the stone will continue to grow and in addition to the hydronephrosis there is a hydro-ureter. Infection will produce scarring with contracture and finally stricture formation which will interfere with the restitution of normal function.

Tumors of the renal pelvis and ureter may be short and spreading or tall and pedunculated. They may be classified as benign or malignant; however, they are potentially malignant and are usually identical with those found later in the bladder. Those of the pelvis sooner or later extend into the ureter, or implants are worked down with the stream of urine to lodge in one of the areas of constriction. Primary tumors or implants in the ureter grow until they produce a partial or complete obstruction. Often, due to the interference with drainage, calculi develop.

In practically all of the anomalies of the kidney and ureter drainage is very poor. This favors infection and calculus formation. Obstruction occurs with its resultant hydronephrosis and pyelonephrosis.

The extrinsic causes of upper urinary tract obstructions are indirect in their casual relationship and can produce some very perplexing problems. They are mechanical in nature and produce their effect by pressure upon some part of the urinary tract. An aneurysm of the renal vessels while rare can exert such pressure on the pelvis that complete obstruction

occurs. Aberrant vessels or fibrous bands about the ureteropelvic junction cause a partial obstruction resulting in very large hydronephrosis. Adhesions, inflammatory or postoperative in area near the course of the ureter, can and do cause constriction of the ureter. Pelvic adnexal diseases in the female, and seminal vesiculitis in the male very often are causes that are overlooked. Tumors, both pelvic and abdominal, may cause marked distortions of the ureter. Recently the author observed a very interesting case in which there was pressure exerted upon the ureter by a calcified lymph node.

In searching for the causes of obstruction of the upper urinary tract we must be on the alert and remember that we may find the cause either intra-urinary or extra-urinary at any point along the urinary tract from a calyx to the uterovesical orifice.

**CLINICAL RECOGNITION.**—The diagnosis of obstructions of the upper urinary tract is based upon painstaking clinical history, general examination, and complete urological examination. Obstruction of the upper urinary tract may be bilateral but usually is unilateral, and the symptoms are local. Anatomic changes take place early, before renal functional disturbances are present. The symptoms of the early anatomic changes are the first to be brought to the attention of the patient and his doctor. Herein lies one of the points of differentiation between upper and lower tract obstructions. In unilateral upper tract obstructions the symptoms are local, while in the lower tract the symptoms are general with marked disturbance of renal function, which causes the patient to be ill before anatomic changes take place.

The *signs* and *symptoms* in the order of their importance are as follows: pain, hematuria, pyuria, tumor, urgency, frequency, and polyuria. Pain which is the most characteristic symptom is usually colicky and recurrent in type. It varies with the nature and site of the obstruction, usually located in the costovertebral angle or loin and radiating down the course of the ureter. Nausea and sometimes vomiting accompany the pain. Hematuria may be present with all types of obstruction, most common with calculi and very often with ureteral strictures and renal infections. This may be explained by the fact that beneath the mucosal coat in such cases there is an ecchymosis which in all

probability is related to the intrapelvic pressure. Pyuria is always present in some degree in calculus. When infection is present, the picture may become altered by chills, fever, prostration, severe pains, and marked tenderness which is limited to the loin and costovertebral angle.

Palpable tumor is a very inconstant sign, and often in a fat individual a large hydronephrosis may not be palpated. On the other hand, in a thin individual an intermittent hydronephrosis may be palpated as a tumor before any other symptoms are present. As this type of hydronephrosis empties itself, the patient may complain of urgency, frequency, and polyuria.

The examination of the urinary tract should be done in a thorough and systematic manner. A careful complete cystoscopic examination must be done. In those cases which cannot be cystoscoped one can resort to intravenous urography which, while it does not give all the information desired, is a valuable adjunct and should be used. By the use of ureteral catheterization one can obtain important information by thorough chemical, microscopic, and bacteriologic study of the urine specimens obtained from each kidney.

The functional activity of each kidney is very important and should be determined before any treatment is begun. There are several methods. One should be chosen which can be done without great difficulty; among these methods may be mentioned the indigo-carmin and the phenolsulphonaphthalein tests. The latter is favored because it is simple and can be estimated with some degree of accuracy. When the dye is given intravenously to a normal individual the healthy kidney will secrete one per cent per minute for the first half hour. Therefore we determine the time required for its appearance, then collect specimens from both sides for a period of ten minutes after its first appearance regardless of the side in which it first appears. Also, we know that a diseased kidney secretes a more dilute urine than a healthy one, therefore the urea secreted by a healthy kidney will be more concentrated than its diseased fellow. This may be quickly and accurately determined by the hypobromide test. This test and the phthalein test will give us much information regarding the functional activity of each kidney. Our examination is never complete without radiography. This can

be done very quickly at the same time as cystoscopy, after specimens have been collected. With the various types of urological tables now at our disposal, we need not move our patient during the entire procedure. Plain radiography will greatly aid in determining the size, shape, and position of the kidney; also the site and degree of obstruction. This is particularly true in 85 to 90 per cent of the cases of hydronephrosis and renal calculi. Information is obtained as to the size, location, fixation, or mobility of the calculus, whether it is in the ureter, pelvis, or calyces, whether it is normally developed or abnormal. Often the question arises as to whether the shadow seen in plain radiography is intra- or extra-urinary. This point is often clarified by double exposure of the same plate by shifting the plate a few centimeters between exposures. If the shadow is intra-urinary it will be in contact with the radiograph on both exposures.

Pyelography and ureteropyelography are very important and if done with care and precision are painless. With the various preparations at our disposal the author never hesitates to do bilateral pyelograms if such are indicated; it saves time and expense and gives great aid in the completeness of the examination.

Their interpretation requires a trained eye and experience is the best teacher. The urologist who does the cystoscopy has the greatest advantage because he is able to use the clinical knowledge gained during the cystoscopic examination. From the procedure the urologist can determine the location of the obstruction, whether it is intra- or extra-renal or in a calyx that does not communicate with the renal pelvis. With the various filling defects and bizarre distortion to the pyelo-ureterogram he is able to determine whether a neoplasm is in the renal pelvis, parenchyma, or outside the urinary tract. Of great importance is the additional information obtained with reference to the damage sustained by the kidney.

**TREATMENT.**—The problem of treatment of obstructions of the upper urinary tract is similar to the treatment of other illnesses—to restore the affected part to as near the normal as possible. To reach this objective a most careful and well-supervised medical, preoperative, operative, and sometimes prolonged post-operative treatment is required.



After a careful examination we know the extent of the damage done and the functional capacity of each kidney. This will determine the type of treatment to be undertaken—nonoperative or operative. First, we must establish the proper permanent drainage to permit the restoration of function. If the obstruction has not been removed during this procedure, it can more safely be accomplished later.

Obstructions due to infections, ureteral strictures, and small calculi are preferably treated by nonoperative treatment. To accomplish this end we have the following methods available: urinary antiseptics, diet and drugs to change the reaction of the urine, inlying ureteral catheters, ureteral dilatations, renal pelvic lavage, and the elimination of foci of infection in other parts of the body.

While we are still in search of a satisfactory urinary antiseptic, we can utilize those available, with a marked degree of success. They should be used in all cases of infections of the urinary tract. Helmholtz and Clark have obtained excellent results with the use of diet and drugs. Their theory briefly stated is as follows: "The organism causing the infection must be known from the start. The hydrogen ion concentration must be determined and recorded when the patient first comes under observation. Diet and drugs are used to the extent necessary to increase the hydrogen ion concentration to the neighborhood of 5.0 and this level of acidity is maintained if possible until the urine is known to be sterile."

The use of an inlying ureteral catheter is often a life-saving procedure in acute cases. It should remain in place until adequate drainage is obtained and the acute stage subsides. With the control of the infection normal drainage is reestablished. The catheter should be irrigated at intervals of three to four hours with one of the many bland urinary antiseptic solutions of proper dilution.

Ureteral dilatations using bougies varying in size from a filiform to those of a 10 to 12 F. caliber give excellent results in the treatment of stricture and small calculi. Dilatations of the ureter with lavage of the renal pelvis should be repeated at intervals varying from ten to fourteen days until the obstruction and infection have been removed. Dilatation has a particular appeal in cases of small bilateral and recurrent calculi; also, in patients who

are not good operative risks the ureter may be dilated sufficiently to facilitate the passage of the stone. There are definite and serious dangers associated with cystoscopic manipulative treatment. Unsuccessful instrumentation may result in injury to the ureter such as rupture, or may be followed by infection. The rapid progress of the infection will be favored when the obstruction has not been removed. It is desirable to have the patient under close observation at all times, so that proper measures may be undertaken as soon as indicated.

The operative treatment depends upon many factors such as, the location, size, shape, multiplicity, character, and the destructive changes in the kidney, resulting from the obstruction. Of most importance is the condition of the patient and the condition of each kidney. The operative procedure chosen should be that which conserves the most renal tissue. In the removal of calculus obstruction, pyelotomy is preferable to nephrotomy. In either case the kidney should be drained for a period of four to five days by means of a small catheter placed in the most dependent portion of the pelvis. The pelvis may be irrigated at intervals of from three to four hours.

In severe renal destruction with pain, infection, and toxemia, nephrostomy is the immediate treatment of choice, to be followed later by nephrotomy or nephrectomy.

The treatment of bilateral obstructions presents some perplexing problems. We have adopted a policy of removing the obstruction from the kidney with the better function first. In such cases we can safely rely on the good kidney to carry the patient through the convalescence of the second operation if nephrectomy should be required.

In unilateral obstructions resulting from tuberculosis infections and neoplasms, nephrectomy with as much removal of ureter as possible offers the best results. All neoplasms of the renal pelvis and ureter should be considered as potentially malignant and should be treated by complete nephro-ureterectomy, including a cuff of the bladder surrounding the ureteral orifice.

In all cases of upper tract obstructions regardless of the cause the patient should be observed at intervals of sufficient frequency to control the recurrence of the obstruction.

probability is related to the intrapelvic pressure. Pyuria is always present in some degree in calculus. When infection is present, the picture may become altered by chills, fever, prostration, severe pains, and marked tenderness which is limited to the loin and costovertebral angle.

Palpable tumor is a very inconstant sign, and often in a fat individual a large hydronephrosis may not be palpated. On the other hand, in a thin individual an intermittent hydronephrosis may be palpated as a tumor before any other symptoms are present. As this type of hydronephrosis empties itself, the patient may complain of urgency, frequency, and polyuria.

The examination of the urinary tract should be done in a thorough and systematic manner. A careful complete cystoscopic examination must be done. In those cases which cannot be cystoscoped one can resort to intravenous urography which, while it does not give all the information desired, is a valuable adjunct and should be used. By the use of ureteral catheterization one can obtain important information by thorough chemical, microscopic, and bacteriologic study of the urine specimens obtained from each kidney.

The functional activity of each kidney is very important and should be determined before any treatment is begun. There are several methods. One should be chosen which can be done with-

out; among these, too, the urologist can keep at their finger tips all of the latest diagnostic features, and hence too often they let a patient drift into a condition which spells extreme effort to ameliorate, with a long convalescence and perhaps a question as to the ultimate recovery hanging in the balance.

To wit: The prostatic conditions which are allowed to run on for months with dependence only on favorite or widely advertised urinary antiseptics, and not collecting chronologically enough chemical data to warrant judgment as to the patient's improvement—while valuable time is lost and the condition is progressing to other organs, until both the genital and urinary tracts may be completely affected.

2. Stop some of the apparent haphazard surgery in the urological field, especially in bladder conditions which seems to be in the making by some who are skilled in mechanical surgery, but are lacking in tech-

be done very quickly at the same time as cystoscopy, after specimens have been collected. With the various types of urological tables now at our disposal, we need not move our patient during the entire procedure. Plain radiography will greatly aid in determining the size, shape, and position of the kidney; also the site and type of obstruction. This is particularly true in 85 to 90 per cent of the cases of ureteral and renal calculi. Information is obtained as to the size, location, fixation, or mobility of the calculus, whether it is in the ureter, pelvis, or calyces, whether it is in a normally developed or abnormal kidney. Often the question arises as to whether the shadow seen in plain radiography is intra- or extra-urinary. This point is often clarified by double exposure of the same plate by shifting the plate a few centimeters between exposures. If the shadow is intra-urinary it will be in contact with the radiograph catheter in both exposures.

Pyelography and ureteropyelography are very important and if done with care and precision are painless. With the various preparations at our disposal the author never hesitates to do bilateral pyelograms if such are indicated; it saves time and expense and gives great aid in the completeness of the examination.

Their interpretation requires a trained eye and experience in surgical procedures, which may be complete prostatectomy, or by prostatic resection. Be it said that not yet in the minds of all surgical urologists is the question settled as to the proper procedures in many cases of obstruction of the bladder neck.

3. Urge restraint upon some of the younger urologists, who see naught but an operating fee before their eyes, in attempting "as a last resort" to do "an operation immediately" because of the subjective symptoms presenting. By so doing they bring discredit on our group, in not utilizing consultation or conversation with the medical man, who also has a partial field in our work, especially in the terminal heart and kidney lesions; as well as consulting with their seniors in urological work.

For example: As urologists of a surgical mind we must not build up in ourselves the thought that we know also all there is to be known of the medical aspect following obstructions of the bladder neck—and while we may know quite well some of the re-

note results, learned from bitter experience, yet medical consultation many times might save a patient if we but had an excellent consultant in medicine at our command, who was at least partially familiar with our problems.

The ultimate diagnosis of the type of obstruction at the neck of the bladder, with an eye to fineness of after-result is one of judgment in weighing the factors which we can elucidate. All these factors must be found out and weighed, and cannot be predicated on a single factor for the outcome. Many times, however, the few that are found at a single examination may furnish reasoning for a false decision. Too frequently, also, do we have our hands tied in making our thorough evaluation. By the patient because of time, expense or pain—in our own or some one's previous examination. Or by the physician who is too little versed in such lesions and may have had one friend or patient who came through some type of operation on a gambler's chance, and who had the same outward symptoms. And this patient had been sufficiently bettered apparently, and temporarily to negate further work, or to refuse a second opportunity to thoroughly restore him to health.

The author is not given to quoting statistics on large numbers of cases, for perusal of the literature bring only repetitions in papers and the hundreds or thousands do not occur in the practice of a urologist, save in the largest of centers, but he can speak as of the ordinary run in one center, where diverse opinions are rampant.

Up-State cases are met in emergencies mostly, because we cannot impress in general on the large group of medical practitioners the necessity of giving the urological surgeon a fighting first chance to see a patient. And the confines of practice are too narrow for the public to appreciate the hardships undergone on the part of a real physician in attempting to persuade a patient to seek immediate aid, when in past years an unfortunate outcome in the little village has carried away a well-known citizen, who dallied too long in his decision and then, in extremis, could not be recalled from the downward path that he, perhaps with his physician, had laid out.

Education has yet much to do with bringing knowledge to the public in general, before we have reached our goal in saving many lives for longer service to the communities, and the special societies are re-

served for developing the newer and more modern ways of surgical diagnosis and modifications of surgical technique.

That is one reason why we still see the use of one or more aspects of physiotherapy tried before a patient reaches our hands for technical judgment, and much of this we may find to be the fault of advertising on the part of commercial houses.

There seems to be no essential need to give the complete list of those lesions which may block the bladder neck, as so many excellent textbooks and articles in the journals have been written on the symptoms and diagnosis, as almost to bewilder the medical man, who faces the gamut of so many and such increasing types of diseases, and their discussions as to various routines to be pursued.

And yet, if we can impress on the medical man and through him get to the public, to utilize the time saved now by 'phone, by auto, by good roads and by the press, and expend it in constant reading of his medical journals, and now and again in educative talks to his community, after close preparation of his subject, his own increased knowledge and that of the community will well repay him in economic return.

While I have said most of what we know may be gathered from medical journals and from textbooks, I yet must not belittle the individualism of each and every specialist and practitioner in medicine.

Nor would I insinuate that reason and judgment with mechanical skill are to be obtained from these textbooks, and so we hark back to the two primary factors, the early diagnosis and evaluation of a group of symptoms beginning slowly in a patient, or with a volcanic type eruption of sudden onset, and the cool judgment of the competent urological consultant.

So it is in that specialty where are found the individualists who develop and reach out with new thoughts to the betterment of the profession in knowledge and new ways of skill, to the relief of humanity.

And hence, we have our own leaders in our own fields, who are far in advance in doing, and by their efforts in a trial-and-error manner, or by strict scientific reasoning give us all an uplift, in concert with those scientific men who have to do with the making of our surgical appliances.

There is a vast difference between the slow, insidious development and the urinary

history as carefully noted, of an enlarging prostate, and that of the sharp staccato note sounded when a calculus blocks the internal meatus, or a carcinoma suddenly shuts off the stream in an unobserving patient.

And likewise there is time given to thoroughly examine the first type of case, even though the practitioner is remote from the finer instruments of diagnosis, and to discuss at length with the patient the probable outcome. While in the latter type the first move must be to give immediate aid in relieving the distended bladder and reestablishing the flow of urine either *per viam naturalem*, or through an artificial new divergence.

The physician must be thoroughly familiar with these symptoms and linger not in judgment as to what should be done in any case. Many times the first few hours lost in a "let's-wait-and-see-how-he-is-to-morrow" hesitancy spells extreme disaster for the patient; and the aftermath is of the making by the doctor who has first seen the case, and not usually upon the man chosen to give relief.

In a general way, we may divide the obstructive uropathies of the bladder neck region into 4 groups:

1. The congenital lesion seen as:
  - Double bladder.
  - Patent urachus and urachal cysts.
  - Congenital diverticulæ.
  - Congenital cysts at the bladder neck.
  - Beginning in infancy and developing more fully later.
  - Congenital valves of the prostate.
  - Neurological birth lesions.
  - Spina bifida and meningocele.
2. Pathological developing lesions:
  - From traumatism as ruptures, fistulae, and punctures, as well as post-traumatic scars.
  - Calculi in bladder or lower ureter.
  - Hypertrophy of the prostate.
  - Tumors near the bladder neck.
  - Acquired diverticulæ.
3. Foreign bodies introduced into the bladder, in men mostly in mid- and later life and in very young female children:
  - A loaded rectum in men or women.
  - Pressure from external growths. Especially in women from uterine or ovarian cause.
  - Pregnancy pressure as is evidenced occasionally, etc.
4. Infectious processes:

Infections involving the interior of the viscus itself, as cystitis with contractions and deformities of the bladder neck, with bars, sphincter sclerosis, reduplication of the mucous membrane, postoperative neglect, extension from the seminal vesicles; prostatitis, acute or chronic, with periprostatic abscesses; or abscesses adjacent to the neck.

Nervous lesions as syringomyelia, syphilis and its after effects, spinal or cerebral. Toxic effects on brain and cord, of diabetes, pernicious anemia, myelitis, cerebral or cord hemorrhages from antecedent disease.

It would be beyond the scope of this short treatise to describe the manner in which urological diagnosticians must work out each case of such a group. This should rather be reserved for the bedside consultations in assistance to our brother practitioners.

And yet, by such simple assistance can relief be given to these patients along the urological line of work, and it is amazing that the specialist is not sought for in hundreds of cases still existing and constantly coming to the knowledge of the physician.

As one example to be picked from all the rest, the author would dwell on two phases of this work which has leaped forward in the last three years to an amazing and marvelous degree.

The writer ventures to say, without contradiction, that no physician exists who has not had upon his call list a male patient with a prostatic enlargement, one with a sclerotic sphincter, with a median bar, or one with a bladder nerve lesion, anyone of which he has observed almost from its inception.

One can readily see, therefore, that the discussion in this paper should be limited to the more common conditions and in a general way reserving for the individuals in the audience to bring up special points gained from experience. By the percentage method we reason that in the clinical order in which cases are seen there come:

1. Prostatic hypertrophy, simple or malignant.
2. Median bars, mostly of acquired type.
3. Sclerotic or fibrotic sphincters, mostly of acquired type, following primary or secondary intracystic infection. Seen in men and women as well.
4. Neurological lesions such as tabes

dorsalis (which seems to be lessening in number), transverse myelitis, and traumatic lesions.

As a guide to the study of these conditions and as to what should be their ultimate outcome, certain factors should be set up and satisfied in the study of any one of these cases.

Many physicians are apt reasoners in diagnosis with little need of mechanical or laboratory aids. Others must avail themselves of every possible aid before satisfying themselves as to proper procedure. While still others, playing the rôle of part-surgeon and part-physician, in many instances spend too little time at either rôle to perfect themselves in this specialty and the ultimate need of a good diagnosis.

As a set-up it may be said that the following should be satisfied in seeing a case through from the beginning to the end:

1. A critical history of the patient, without reservations on the part of attending physician, or of the patient, in any degree.

2. A critical study of the patient by the physician and again by the consultant, not delegating the technical parts of the study to some distant laboratory whence time and change of material enter in, nor "cutting the corners" in one's reasoning "to save time." Far preferable is it in many instances to transport a patient with such a condition to the center of work rather than to bring the laborer in the center out to the patient's bedside.

3. A tentative diagnosis having been made, its accuracy must be checked with all possible means at command and any errors discovered must be revised.

4. A decision must be made as to whether to operate or not, as predicated on the absolute findings, reviewing one's personal errors in similar cases and those of others as known in the literature, together with the risks at stake, and making the patient fully cognizant of the same.

5. The discussion as to the proposed type of operation to be done. This naturally will rest on the symptoms present, the lesion diagnosed, and the deftness of the operator, both from a mechanical and urological standpoint. The question should be thoroughly understood as to whether the operation is aimed at a cure or is to be followed with other steps and whether it will be permanent or merely palliative.

6. Due consideration of any preliminary care if time and condition allow, to utilize many or all of the accessory diag-

nostic means available, with generous consultation as to the probabilities in the case to protect the physician and the operator throughout the course of the treatment.

7. Due consideration in advance of the operation, as to the aftercare which must be thought through, allowing immediate flexibility for emergency.

8. Finally, the postoperative result must be reviewed for several years, attending physician and urologist cooperating, in order to establish a firmer consideration of help which may be afforded in the minds of the public and of the skeptical physicians.

With these rules in mind, which every physician should demand of his consultant and operator, let us take up our four groups:

1. *Prostatic Hypertrophy of Simple Type.*—The symptoms of this are now commonly recognized, but not sufficiently evaluated, by every doctor in this State and increasingly by many laymen.

The earliest medical history deals with this lesion, the earliest illustrated and described autopsies show it.

To be sure, clinical experiments were done in ligation, section, or in enucleation of the vas, as well as simple perineal or suprapubic cystotomies, before sufficient statistics could be collected to show that such efforts were of little avail. The earliest operative removal was a one-stage suprapubic enucleation of a part, or parts, of the gland, later followed by total enucleation.

Much later there followed the perineal enucleation perfected and described in its highest degree by Young, and for a long while the pendulum hovered in this direction. It was taught far and wide and successes were met with, especially in the hands of the master urologists, even though these earlier cases were usually far advanced with heart and kidney lesion from the obstruction. Physicians were reluctant to recommend operation, because of the high death rate, persistent fistulae, incontinence, etc. Still, progress was made and slowly some of the necessary physiology and pathology became known. Intra-urethral drainage came into vogue, and then preliminary catheter drainage, or suprapubic drainage, became a fixed procedure.

Eventually, the suprapubic method again was taken up, but now in two stages, and with some light given by our medical and

laboratory practitioners, in the physiology, cardiology, chemistry, and common-sense reasoning of this condition on the body in general.

And at present, this group of procedures is chosen successfully by the majority of operators.

Each of the above has its advantages and disadvantages, as the variations in the types of cases, and the adeptness of operators is considered.

Where a patient is a good surgical risk, there should be no question but that the total enucleation of the gland is the sanest, wisest, most surgical of procedures. For it gives the relief sought and the benefit to the surgeon and the pathologist of knowing whether the hidden nodule of malignancy has been taken out; and furthermore, it aids in the postoperative outline of treatment.

But recently, the operation of transurethral resection has been forced to the forefront as being the operation of choice.

A year or so ago its advocates preached its use for all cases and with apparent amazing results from a single session.

It was and is being done by all sorts of operators and mechanics who little understood, and who are just beginning to realize, the physiological and pathological dangers, and even the operative technical skill required.

It now has progressed to the point where certain negated cases are being correlated and published as being better fitted for the older total enucleation. The various modalities of the electric current are being understood. And even to-day we note that several successive stages of operation or repeats are advocated by some of the best adherents of this method.

The action of the current on varying types of tissue is now better understood, as well as the reaction of the remaining tissue far away from the site of operation, which has been partially coagulated, charred, or necrosed.

Our bacteriological and postoperative studies have broadened our concepts of shock in such cases; our ideas of infection and its action on the body postoperatively in these cases is undergoing change. And our preliminary and postoperative examinations are being amplified in wider directions, because of the newer lessons learned.

By this method patients may be operated earliest who refuse a total enuclea-

tion even when in good operative health and may be given, at least temporary if not permanent relief for some years, provided "the medical man or the consultant can outguess the gland in its direction of enlargement."

It is cheapest economically in time, money, and hospitalization.

It seems to be best suited to the median lobe or to the prostatic bar type of enlargement. When well done in one or two stages, it seems marvelous, but of course time yet has to tell.

Perfectured by Davis, McCarthy, Caulk, Alcock, and many others, we have yet to remember that there is much to study and learn as quoted from an article by Herman and Green in the *Journal of the American Medical Association*, Vol. 101, No. 18, who say: "The mechanical problem depends on size, shape, and location of obstructive mass, and the difficulties and dangers increase in resection in almost direct ratio with the vertical diameter of the tumor."

Its universal adoption by all types of operators cannot be but a repetition of the old perineal days, but fortunately, the preliminary expense of equipment may forbid its rapid utilization, save in the hands of a few, from whose experiences we are now getting authentic reports. It is not for all types of cases by a large percentage, but is of inestimable value in the properly selected ones.

The apparent ease of manipulation of these newer instruments is apt to lead the novice astray—with disastrous results. So, it behooves us as a group of strictly urological mind to advocate caution and slowness, rather than to preach to our juniors "there is but one operation and we are its prophets."

In the accurately diagnosed malignant prostate, however, with our present command of radium and x-ray, and the simplicity of implantations, no greater boon has come to humanity than the resection type of operation in the majority of cases coupled with the use of the above adjuvants. In this condition a gutter can be grooved out of the malignant mass, thus giving freedom of drainage, with many times a longer action of the sphincter before its involvement, and thus lessening cases of the older type of suprapubic cystotomy and the wearing of a suprapubic drainage tube with all its dangers and inconveniences until the demise of the patient.

This resection type of operation can be repeated without the danger of metastatic implantations, and while the disease is not stopped in progression, save as the adjuvants of radium and x-ray assist, yet the ultimate end, the comfort of the patient, is maintained and prolonged.

2. *Median Bars.*—However, when we come to this second group of median bars, we must adopt a different attitude, because of the newer instruments, and even we ourselves must become more adept in differential diagnosis.

This lesion is usually of the acquired type, though it may be overlooked as slowly progressing from early youth, until we are warned by the patient's history of the constant little pool of infection which gives us the continuous dirty urine and increase in number of voidings with all the symptoms of a cystitis, as well as later possibly the occasional pyelitic symptoms.

For many months or years this may progress with the patient seeking relief from many physicians for a "cystitis." And until recent times I venture that not one of us is there who has not missed out on many such cases, though we have reasoned in vain to discover the cause of the syndrome presented.

Too few of such cases have come to cystoscopy as yet, for they can drag along in their own way using one urinary antiseptic after another, as in the present history of chronic constipation and its many vaunted specifics, or the many combinations of alkalies for the so-called acidosis of the intestinal tract.

As a group we have not reached our practitioners to assure them of the relief we can offer, quickly, accurately, and permanently with the shortest of stays in the hospital and the abatement of all symptoms.

In this class of cases the operator must know his bladder and his landmarks most accurately. Where formerly the cold punch was used, and even now the visual cautery punch might still be used, the case of the new cauterizing and coagulating currents with the accuracy of visual manipulation in removing a halfmoon piece or more of the obstructing bar, bespeaks the opening up of a field long neglected and much mistakenly diagnosed heretofore.

But we must become versed anew in our electrical knowledge and beware of our currents!

For there is a milliamperage to be

learned for the prostatic resection, and another for this median bar, and for each a different strength in the after-coagulation. Where our sense of touch with the punch was our previous guide, it is now the retinal rods and cones we must depend on, and no operator of dimmed sight should dare attempt the use of so dangerous an agent.

Clinical reports now being taken from pigeon holes bespeak the successes and failures in this newer field and by the same token fewer bladders are being opened for the supposed prostatic condition, to the dismay of the operator who had not studied his case sufficiently.

But these closer studies of increasing accuracy will all tend to clear up one more of the common obstructive uropathies.

3. *The Sclerotic or Fibrotic Sphincter.*—These cases also fall into a category once neglected, or relegated by the urologist back to the home physician with the advice to use the Van Buren sound, or the Kollman dilator as being the easiest way out for a condition not accurately diagnosed. And how many have been the poor victims who have been sounded and dilated year after year to eternity, in a large percentage of cases to their detriment and not to their betterment, owing to too little of actual visual search.

Part of this again may be attributed to early instruments of poor type, which have been improved so rapidly in these last few years, while again credit must be given to our own group in seeking out accuracy of diagnosis and amelioration far different from the old medical (or forceful surgical) dilation, sphincter section, or complete ablation.

The dribbler can now be made permanently leak-proof in the majority of cases and his increasing cystitis can be stayed and bettered, provided the primary causal factor is removed, as usually seen in an infection higher up in the tract.

While used as a temporary expedient the higher infection may be treated at the same time.

The patient with the chronically distended bladder due to this lesion may be restored once more to a normal schedule, while the one who has lost control and has the contracted type of bladder, if seen before infiltration of his deeper bladder tissues can be assured of a reasonable carrying capacity after patient hydraulic dilation.

virulent catarrhs of this area, depends on a normal adult mucosa and high air-containing capacity. During the period of change from the infantile ear to the adult type every infection of the nasopharynx must influence to a greater or less extent, the normal change of the mucosa. An adult may have nasopharyngitis, but an infant has nasopharyngo-otitis media. The embryonic mucosa will under good conditions change into a healthy adult type, but if during the period of this development, it suffers from an acute infection, areas of the mucosa will remain in the embryonic type. These pads of embryonic mucosa, and they have been seen in old age at post-mortem, are much more susceptible to infections, and thus we see ears that are continually flaring up even with the mildest attacks of rhinitis, nasopharyngitis, and pharyngitis; they, too, are probably a factor in those suppurative cases which become chronic. Every inflammatory attack leaves at least some slight change in the tympanic cavity and it is the summation of these "subminimal" changes, which eventually produce a case of the hard of hearing. One believes, that not otologists alone, but physicians in all departments of medicine are prone to treat too lightly *seemingly* mild infections, those that produce mild reactions and because of this are not localized and sometimes produce grave results.

There is a considerable group of pediatricians and physicians, too, who sincerely believe in letting infections of the middle ear run their course. They believe in treating them palliatively and letting the ears rupture spontaneously. They say they get better. They do not have any more cases of surgical mastoiditis than those who have paracenteses done. The point of this group seems to be to avoid either a paracentesis or a mastoid operation, and if this has been accomplished, then there is great rejoicing in the camp. No thought, however, has been given, toward function of the ear, and after all the patient is interested in just one thing, later in life, and that is the hearing. There is no doubt in the writer's mind that both paracentesis and mastoid exenteration, do save the tympanic mucosa many times and thus save the hearing. He does not believe that paracenteses will cause a surgical mastoiditis. He does believe that now and then it may prevent one.

The paracentesis will do the following:

1. It will relieve pain and, by so doing,

the patient will get rest and sleep, will take food and fluids. The discharge will run out of the external auditory canal, instead of dripping by way of the eustachian tube into the throat and being swallowed possibly produce gastro-enteritis. Not all agree on this.

2. It will protect the mucosa of the tympanic cavity from further lesions due to autolytic digestion by the pus under pressure, for surely if pus can digest its way through the membrana tympani, as it does in a measure to produce spontaneous perforations, it can at the same time produce similar lesions elsewhere in the cavity. Many of these lesions may be in silent areas, but should they occur in the vulnerable areas, the damage produced is irreparable due to scar tissue formation.

3. By free drainage from the mastoid the mucosa may be saved, that pneumatization be preserved and continue at least in places, so that we may have some cells in the mastoid rather than a sclerosed one.

4. The symptoms of meningismus in an infant subside readily after a paracentesis.

The author believes that impaired hearing limits probably the efficiency of the individual much more in earning a living than many other conditions, which stimulate the medical profession to much more activity to correct. The impairment of hearing is our problem and our responsibility and it is for us to educate the laity and the profession, that they will see our point of view, *viz.*, the saving of the hearing.

#### ANATOMICAL VARIATIONS OF THE MIDDLE EAR IN THE INFANT FROM THE ADULT

Space does not permit enumeration of all the differences in the anatomy of the ear of the infant from that of the adult. We shall therefore consider merely those of the middle ear.

#### MIDDLE EAR

##### (A) Eustachian tube:

1. No bony eustachian tube.
2. It is relatively shorter and relatively larger in bore, therefore more of a drainage tube; pus goes to pharynx, is swallowed.

N.B. Because there is no bony eustachian tube, swallowing irritates a tender tympanic cavity, when infected, due to pulling of the tensor and levator palati muscles which open the tube on swallowing. The child refuses food and fluids, loses weight rapidly.



(B) Tympanic cavity

1 The membrana tympani is 3 to 6 times thicker in the infant than in the adult, therefore it does not rupture so quickly as in the adult, because of

(a) thickness, it may go 6 to 8 days without rupturing,

(b) the eustachian tube being so short and so large in bore acts as a drainage tube, therefore intratympanic pressure is less in infant's ear, and there is less tendency to rupture

2 The tympanic cavity at birth is really not a cavity but is filled with embryonic mucosa which gradually changes to the adult type of mucosa. We have a mesotympanum and hypotympanum at 6 months, mastoid antrum at 8 months, attic at end of first year, adult type of mastoid at 4 to 6 years

(C) The tegmen tympani presents a suture between the squamous and petrous part of the bone, here in infancy is a blood sinus. Thus here the dura is in close association with the tympanic cavity

(D) Mastoid antrum. At birth there is no mastoid process, the antrum is all that is present. The mastoid antrum, tympanic space and internal ear are almost adult size at birth. Thickness of lateral antral wall is 2 mm, frequently closed by cartilage, hence we get subperiosteal abscesses early in infants

NASOPHARYNX

Is relatively smaller in the infant than the adult. This fact together with the very short and wide open eustachian tube, gives us actually a closer anatomical relationship between the tympanic cavity and the nasopharynx in the infant than in the adult. Moreover we always have added to the nasopharynx the adenoid which makes the free space smaller all this at a time, when the patient is peculiarly subject to the many infectious diseases—colds and sore throats. Now then may it not be well said if an infant has a cold in the head it has an otitis media?

**PATHOLOGY**

Catarrhal attacks not sufficient to produce enough exudate to escape to the free spaces produce some change in the mucosa after about three or four attacks, and thus we see changes in the membrana tympani.

We have all grades of severity of catarrhal attacks up to and including simple otitis media, which produces a little or more exudate free in the tympanic cavity. This exudate consists of serum and mucus. The serum is more or less absorbed or escapes down the eustachian tube. The mucus is retained in little or greater amounts and remains as a more or less sterile foreign body which by virtue of its presence acts as a slight irritant causing itself to be invaded by connective tissue cells and or-

ganized forming a scar. Subsequent attacks cause more scars and adhesions.

This fibrous tissue can take on activity even without an inflammation and proliferate after the type of a fibroma, it can fill the tympanic cavity and even invade the cochlea by way of the round window and thus produce internal ear disease (Alexander). Ruttin had a dog stone deaf, yet he had a functioning vestibular apparatus so that he could run and jump and do tricks. Ruttin tested out the vestibular apparatus, producing normal responses. When the dog died Ruttin posted him and found both cochleae filled with fibrous tissue, the semicircular canals intact.

On examination of the tympanic cavity and eustachian tube one sees many ridges and concavities in the floor of the tympanic cavity and in the eustachian tube. Hence there are numerous places for mucus to lodge and to become organized, making it possible for further progress in subsequent attacks. The inner wall of the tympanic cavity has niches also, namely, in the region of the round window, the oval window, the sinus tympani and the fossula subfenestra rotunda. Here globules of mucus may be retained and organized, and from these areas the fibrous tissue can proliferate.

On examination of the tympanic cavity by far the greatest extent of the walls of the cavity could be classed as a silent area. There could be lesions—ulcers in an acute active inflammation or later, healed scars which would produce no symptoms—but surely the regions of the round window and oval window would not tolerate a lesion without manifesting itself by symptoms, *viz.*, deafness and tinnitus, deafness of the internal ear type at least eventually, if not early. The lesion at first being of the middle ear type. We are all familiar with the markedly retracted drum membrane, which is held fixed by adhesions. It would not be difficult to visualize an ear with a fibrous tissue lesion at the oval window or round window, not involving the membrana tympani. This type of lesion the author calls also chronic adhesive otitis media.

*Our difficulties are many*

1 The child may be born with a foreign-body otitis due to liquor amnii, or meconium forced into the eustachian tube or tympanic cavity during its voyage through the birth canal.

2. Because the nasopharynx of the infant is relatively smaller than the adult, being made even smaller by the presence of adenoid, because the eustachian tube is relatively shorter and is relatively larger if not actually larger in bore than that of the adult, the tympanic cavity is much more exposed to nasopharyngeal infections in the infant than in the adult.

3. It is the age when the patient is subject to acute infectious diseases.

4. We have to combat a propaganda, which is popular with many parents: the opening of the ear. A not inconsiderable group of well-meaning pediatricians and physicians very proudly proclaim that they do not open ears, they leave them alone and they get well. Their success is measured by the fact that the membrana tympani did not rupture. They are blind to the fact, that because the membrana tympani of the infant is anywhere from three to six times thicker than that of the adult, such a patient may suffer 4 to 6 or 8 days from a suppurative otitis media, without a spontaneous rupture of the drum membrane. During this time a considerable irreparable damage has taken place to the intratympanic mucosa even in the case that the ear should heal without a surgical mastoiditis.

5. Children never complain of impaired hearing, the parent or the school teacher tells us either the child is inattentive or it is deaf.

6. Unless ear symptoms send the young patient to the otologist, we do not see these early cases, and hence are powerless to help the patient at this important time.

7. In the pediatric clinic it would seem that the child should have the benefit routinely of the judgment of the otological department rather than be forced to wait until the pediatrician decides to call in help.

#### CONCLUSIONS

1. A healthy ear depends upon a healthy nose, nasopharynx, and pharynx, and our attention and treatment must be directed to these in all involvements of the ear.

2. Up to the present time there is no positive way of preventing colds in the head and epidemics of influenza; therefore, as is the case in the acute infectious diseases, we should endeavor to impress upon the laity the necessity of strict isolation in all these cases, thus limiting the spread of these infections and the number of involvements of the ear.

3. The writer believes that it would be a good thing to give all patients who have had at least a sensation of fullness in the ear, during upper respiratory infections, a Politzer inflation two to four times, say two weeks after recovery from the so-called cold in the head, to dislodge serum or mucus, that might become organized and be the beginning of progressive deafness.

4. All procedures that prevent or limit acute infectious diseases with localizations in the nose and throat, are equally valuable to the ear.

5. Adenoid operations give the most help to the ear during the first four years of life. We cannot hope to influence the development of the ear, certainly after six years of life.

6. It is a poor policy in infections of the middle ear to let them take care of themselves as is done by a considerable body of well-meaning physicians; the ear may survive the infection, but there is a great tendency for impairment of function.

7. Where there is marked impairment of hearing, instruction should be given early, in lip reading and in old cases; a careful selection of some instrument should be made which helps the sufferer to hear.

8. One feels that the catarrhal, the serous, and the simple forms of otitis media are probably a greater cause of impaired hearing later in life than the cases of suppurative otitis media.

*In my mind the greatest measure in the prevention of Hard of Hearing would be compulsory isolation of all cases of upper respiratory infection, thereby materially reducing such complications as sinusitis, and otitis media in all of its forms.*

#### ABSTRACT OF DISCUSSION

DR. JOHN D. CARROLL: I agree with Dr. O'Connor that early paracentesis or myringotomy is essential in reducing one of our causative factors. I believe also that as far as our section of the State is concerned the public is becoming more educated to allowing early paracentesis and the values derived thereby. It is only rarely now that I have any extended explanation to make for such procedure. We are doing many more paracenteses and are doing fewer mastoids than we did some years ago. I agree with Dr. O'Connor that many of our physicians to-day are still waiting for the ear drum to rupture spontaneously but I believe that they are lessening in their obstinacy and a few years hence we will have little trouble from that source.

The hearing of our school children is coming in for more attention by the school examiners and many of these children of tender age are being referred to doctor's offices or clinics for

examination and treatment of ear conditions. These school examinations are doing much to acquaint the parents and public in general with the need for early discovery of hearing impairment. I do believe that greater importance could be placed upon these school examinations if they were done by or under the supervision of an otologist. It has been my experience so far that many of these children after having been examined in many cases by a nurse or other attendant using the audiometer in making examinations have been reported as definitely lower in hearing in either one or both ears than actually presented itself when the patient arrived for examination and treatment. There are several factors I believe which influence such tests and are not recognized by the non otologist attempting such examination. Many of these children or their parents when questioned by me have admitted that they have had a severe head cold or sore throat at the time of or shortly previous to the examination. Such tests made under those circumstances I believe to be comparatively useless or at least erroneous.

My thoughts are in accord with those of Dr O'Connor in regard to follow up treatment after the subsidence of acute middle ear conditions. There has been a tendency in the past to overlook the sequence of impaired hearing after acute inflammatory conditions. Educating the parents as to the need for follow up treatments will tend to lessen the incidence of hearing defects from this source.

Periodic health examinations have been stressed for some years by the medical profession as a means of preventing or lessening the incidence of disease. Periodic ear examinations by a competent otologist I believe would do much to lessen the incidence of poor hearing not only in youth but in middle adult life when so many cases of catarrhal deafness coming like a thief in the night stealthily creeps upon its victim until a definite loss of hearing exists before recognized by the patient.

ESTELLE C. SAMULLSON. No doubt many of you have heard about the program in conservation of hearing of school children which has been in operation in New York City since last January. This program is sponsored and operated by the Board of Education under the CWA. The New York League for the Hard of Hearing Inc. cooperated in training the personnel and assisting Mr. Daniel Caplin, Assistant Director of Health Education, New York Department of Education who is director of the project. Almost 200 teachers were trained as audiometer technicians and teachers of lip reading. The program called for the testing of 600,000 school children. 136,000 have been tested to date. Over 4,000 have been found to have impaired hearing. The 4,000 represent the number of children discovered on the basis of three tests: two with the 4A audiometer and one with the 2A. Over 10,000 children were found to have had ear conditions such as abscesses, ringing in the ears and running ears. This is a significant figure in a discussion of prevention. May I call your further attention to the fact that the programs call for an otological examination of all children showing a hearing impairment? While the medical end of the program has not been inaugurated to date we are assured that it will be.

Such programs and activities in our school

communities should have your active support and cooperation. The school boards and propaganda agencies concerned with hearing health of school children need the otologists and welcome their suggestions and guidance. We need you too to bring about the cooperation of the family doctor.

Your State Society has a committee which is a subcommittee of the committees on public health and public relations. This subcommittee has taken for its objectives:

1 Raising the standard of otological care of children in schools for the deaf.

2 Working for conservation of hearing of all school children.

Will you work with it toward the achievement of these objectives?

DR. FAIRLY A. PRATT. As the otologist of the State Education Department I owe a great deal to all of you for the support and cooperation you have given to our program for the hard of hearing school children in this state. It is through your support that we have arrived at this point where we seek your fullest support for the continuance of this program that through you the education authorities may know how many children should be provided with special education—lip reading provided in the grades for the hard of hearing children and special schools, for the deaf.

The ideal would be to have an otologist for every school. As this is impossible at the present time we must continue to send all children whom we find defective to the otologist privately or to the clinic.

The policy of the Medical Inspection Bureau is that tests for hearing are given by the school nurses to day using 4A audiometers. This is a screening process only. We recommend checking these with a 2A audiometer wherever possible. We are obliged to use the material we have at hand for finding these children. This is the school nurse teacher. We have 500 throughout the state exclusive of New York City, Rochester and Buffalo. These nurses are certified by the State Education Department as school nurse teachers after taking 12 semester hours of school nurse teaching. They make the tests for acuity of hearing after receiving instruction in the use of the 4A audiometer. This instruction is limited as there is only one person to give it with very limited funds for travel and the state is large. It is inadequate. You can do much to increase the efficiency of these tests if you will get behind the movement for conservation of hearing. Your criticism is justified when you complain of the inaccuracies of these tests. You can make it constructive criticism if you will recommend for the state more audiometers and a personnel to supervise the instruction of those nurses who give the tests.

Such action on your part will not be detrimental to you.

It is further our policy to refer to you all children with a hearing loss for your examination and treatment. This is done by the school nurse and school physician. The school physician in the majority of cases is on a part time basis, inadequately paid and busy.

The method of referring these cases to you is not ideal in that each parent is notified by what we call a notification to parent or guardian blank which advises parents that the child has a defect

of hearing and that the advice of the family physician must be sought. Sending the child to the family physician is done because over a period of twenty years it has been necessary to have a method by which the advice of a physician would be obtained for all defects. In this state those other than physicians are permitted by law to correct certain types of defects. If all defects are referred to the family physician, the majority will be cared for by a physician in the field in which the defect lies (teeth, eyes, ears, etc.). The Medical Inspection Bureau of the State Education Department whose function it is to provide medical supervision of school children believes this the best way to answer the charge

of discrimination against any nonmedical groups licensed to correct defects. This therefore points more clearly to the duty of the otologists to unite in an effort for conservation of hearing of all children of preschool and school age.

To bring out the point made in Dr. O'Connor's paper in which he points to the need of conserving hearing at an early age by having the children see an otologist at the commencement of an acute ear condition, let me say that you would have the support of the Medical Inspection Bureau of the State Education Department.

Let us all work to the best of our ability and with the best tools we have for the prevention of deafness and the conservation of hearing.

## OXYGEN AND ATHLETICS

Investigations show that swimmers who inhale oxygen before entering the water are able to better their previous records. The Japanese swimming team, which made a remarkable showing at the Olympic games in California in 1932, inhaled oxygen for five minutes about half an hour before competition, reports the *A. M. A. Journal*, but it cites experiments by various investigations which seem to show that better results are had if the oxygen is inhaled immediately before the swim. Tests made by P. V. Karpovitch and reported in the *Research Quarterly* of the American Physicians Education Association show that men who took two deep

oxygen inhalations just before plunging into the water were able to break their own unofficial records. Moreover, of six who could not break their own records, four did not follow instructions and exhaled the oxygen before striking the water. However, swimmers who inhaled oxygen for a period of from three to five minutes and discontinued it from four to five minutes before a hundred yard swim found that the inhalation had no noticeable effect on the speed of swimming. It was found that the inhalation of oxygen after any athletic activity hastened recovery. Karpovitch concludes that oxygen taken immediately before strenuous exercise has little effect.

## "A MODERN DR. MacLURE"

The wide admiration for the efforts of Dr. Allan R. Dafoe in keeping all the Dionne quintuplets alive so long gives interest to a letter from the doctor which appears in the *Bulletin of the Academy of Medicine of Cleveland* under the above title. We find it quoted in the *Bulletin of the Medical Society of the County of Kings*. The Cleveland editor remarks that: "It is an inspiration to those doctors who work surrounded with all the best modern hospital equipment to realize that men can practice in primitive surroundings with such common sense and efficiency as is shown in this letter." Dr. Dafoe's letter runs as follows: "I feel that I must answer your letter. Babies were born in one-half hour; two complete in sacs. These remained for some minutes while I tied off the first three. They looked interesting swimming around and kicking. The mother was apparently dying and pulseless. I expressed placenta. This was common to all cords which entered the mass. Apparently a one-ovum pregnancy. It looked no different from a one-child delivery. Placenta was destroyed by the midwives. I was too busy with the mother to pay any more attention to the babies, etc. She recovered after an hour's work. Pituitrin, ergot, holding uterus, etc.—Am very busy these days.

"I am glad that my few notes met with your approval. I have been busy, and perhaps they are not too plain.

"At present the children are improving slowly, but are a handful. Difficult to make them drink enough. They are fed every two hours, temper-

ature of incubators is now kept at 82 degrees, using Taylor Humidiguides to keep the moisture at 50 to 55. Three single incubators, and one large one to hold two. Oxygen, 96 per cent, and CO<sub>2</sub>, 5 per cent, administered four or five times a day as a routine. Oftener if they show cyanosis. Rum, one drop in milk—if and when needed as a stimulant. Children are only handled once a day to be oiled and cleaned and weighed. No one, of course, is allowed near them except the nurses with gown and mask. My inspections are only made through glass.

"The mother in previous pregnancies (six) used to stay in bed only for three or four days. Difficult to keep her there now.

"Human milk is furnished me daily from Sick Children's Hospital, Toronto. Children are now taking 45 ounces per 24 hours.

"Sometime when not too busy I will try to make a full report which will probably be published in the *Canadian Medical Journal*. I see no objection to publishing a few notes in your *Bulletin*. Use your own judgment."

The Dionne quintuplets have started such a scare that a California man has taken out an insurance policy for \$1000 with Lloyds against the arrival of twins in his home this fall.

A bright newspaper writer, noting that "the Mayo people say the same germ causes sneezing and sleeping sickness," remarks dryly that "he must interfere with himself a lot."

# THE BIOPSYCHIC APPROACH TO DISEASES OF THE MIND. ITS DEPENDENCE ON NEUROLOGY AND GENERAL MEDICINE

FOSTER KENNEDY, M.D. F.R.S. (*Edin*)

*New York City*

Neuropsychiatry by its very nature must pervade all medicine, neurology must rest upon it, and must be the base of psychiatry. We who study these things must concern ourselves with the general field. You remember when Peter rested on the roof-top he saw a great sheet let down from Heaven, full of all manner of creeping and crawling things. Shrinking from them he heard a Voice from on high saying, "Call nothing that I have created common or unclean." In the past century neurologists were busy collecting, classifying and, as their often unappreciative colleagues would say, "labeling" specimens of neural disorders. Even to day many physicians point at us an unwitting finger, thinking us an academic lot, full of wise saws but in the main signifying nothing. This view is long outgrown, far behind the realities of our employment. We have viewed and learned the flora on the ground's surface, tabulated and brought them into the scheme of law. Now is the task of digging into the ground to find the roots from which plants spring and of analyzing the soil—often heavy and seemingly unprofitable labor but work which is the very stuff of medicine and on which will one day be established a true pathology of mind.

May we here examine a little the detail of this pretentious statement? For example, think of the role of focal infections in the production, often quickly, often at long last, of degeneration in the central nervous system. Abscessed teeth and chronic sepsis of the tonsils by perineural lymphogenous infections cause cervical spinal arachnoiditis with cord compression and slowly progressive paraplegia. Carbuncle of the neck, by lighting an almost instantaneous fuse, may cause an explosion in the upper spinal segments with transverse myelitis and quadriplegia. Diphtheritic sores of the hand have been shown to cause radiculitis and spinal paralysis of the affected arm, while the same diphtheritic sores on the thigh, throughout the British Forces in Mesopotamia, gave rise to cauda equina neuritis with double

dropped feet and paralysis of the sphincters. Kinnier Wilson has shown the part played by chronic lead poisoning in painters and cable layers in the later production of amyotrophic lateral sclerosis. If one neural poison can cause central cell degeneration in this manner, the same road of invasion is open to others whose nature still lies hidden from us.

Lately a woman was seen by us who gave a history of recurrent herpes zoster in the left 2nd and 3rd lumbar root skin areas of the left upper thigh. The painful eruption had appeared regularly for 16 months in the first days of each menstrual period. She had consulted many physicians of the skin with slight symptomatic success. The clue to her condition was the discovery of an infected Bartholin cyst in the left labium which, aggravated at the period, caused an ascending inflammation of the appropriate roots and posterior spinal ganglia.

Again a man was seen who had extensive anterior horn muscular atrophy of the legs with fibrillary twitching, usually thought characteristic of progressive muscular atrophy. The absence of any signs of involvement of the cervical segments, however, caused us to suspect the existence of a local infecting focus. The cure of a chronic prostatic abscess, in this case, resulted in recovery of function in the lower spinal segments.

Last year a soldier had eight upper teeth removed at one time under local anesthesia. Three days later he began to have severe neck pain and occipital headache and, in two weeks, he died of meningitis. The road for bacterial invasion of the brain membranes had been opened through overconfidence in modern dentistry applied to infected tissues.

One may point out the dependence of some spinal cord degenerations on long-standing achylia gastrica which, in its turn, may depend upon a chronic cholecystitis.

A dozen years ago a violent epidemic of polyneuritis with many scores of fatalities was traced to streptococcal milk. The dependence of other inexplicable

fornis of neuritides is often found in nutritional deficiency, not due to inadequate diet but to inadequate assimilation through deterioration of function in the mucous membrane of the alimentary canal.

But there is no need to pile Pelion on Ossa; we must realize that the causes of neural degenerations lie often in infections of other tissues. Within the lifetime of all here, paresis and tabes have been proven to be caused by lues and only by lues; but most of the older men as students were instructed that these two nervous diseases might come from overwork and exposure—presumably to the winds of Heaven! I was told as a student that paralysis agitans was "a neurosis" without organic basis. We know now its cellular pathology and much of its infective origin. Asthma was to me at college akin to the vapors of a still earlier day. Now we understand its allergic etiology and are beginning to sense the great part individual sensitiveness to specific proteins may play in many cases of palsy, blindness, and various obscure forms of cerebral illness.

So, we neurologists live in no ivory tower. We scurry over and delve in the fields of internal medicine and must also try to throw search-lights through the tenebrous fog of endocrinological fact and fable. So, too, we must deal with the aberrations of all the special senses. We must try to bare the causes of many cases of blindness, of discrete losses of vision, of diplopias and, often enough, of simulated disease. We must try to give a reason for subjective visual phenomena, like visual fits or the more complex hallucinations of men and things associated with disordered function in the temporosphenoidal lobe. We must know enough about sinus disease to distinguish between the pain caused by osteitis of the floor of an antrum and that of trigeminal neuralgia and between the localized headache due to pus in a sphenoidal sinus and a unilateral migraine. We neurologists must examine the ears *ourselves* and later secure skilled aid from the expert. We have to decide the significance of subjective ear noises and the significance of islands of lost hearing, to appraise labyrinthine efficiency and distinguish errors in semicircular canal mechanism from those of the cerebellar system. Errors in respiratory rhythm and palsies of the vocal cords, together with bulbar palsies and hysterical aphonias give us a link with the laryngologist. Thus the senses of taste,

touch, and smell, and the vagaries of speech all bring grist to our mill and we must grind thoroughly if we would make good bread.

We cannot busy ourselves with the spinal cord without acquaintance with its bony covering; nor can we deal with paralyzed members with no concern for the resources of the orthopedic surgeon in their cure. At times we can elucidate the cause of sciatic pain as being due to a tumor of the epiconus, not easily susceptible to spinal fusion, and aid by the diagnosis of dystonia musculorum in the orthopedic problem of the resultant disordered joint.

The palsies of the sphincters and the failure of the sexual reflex bring us into alliance and understanding with the genito-urinary surgeon, but it is in the great problem of incurable pain that we can perhaps be of most assistance. Inoperable pelvic cancer, prostatic or uterine, may be made somewhat bearable by the operation of chordotomy, the division in the upper dorsal region of the tracts carrying pain impulses to the brain and consciousness. This operation, in proper hands, is no more arduous to the patient than is an exploratory laparotomy or an appendectomy; it causes no motor palsy, no essential sensory loss, merely a transient sphincter disturbance and will secure the patient from most of the rigors of morphine life. There is nothing to be said for the expectant treatment of bladder or womb cancer. When the diagnosis has been established and local treatment exhausted, chordotomy should be done before morphine addiction has occurred.

All the specific fevers have their nervous concomitants, paralyses due to cerebral thromboses, neuritis, deliria, and psychoses. These latter, mark you, are the outcome of infection and fever. Is it not strange in us that a patient with pneumonia or typhus who, harrassed by delusions of imminent destruction, throws himself from a window is classified as delirious from fever, while the same psychic situation with no *obvious* intoxication may be called paranoiac, the organic pathology of which most psychiatrists deny? One patient is said to have a disease of the body, the other a disease of the mind. This is at once loose and dogmatic thinking. We must educe a pathology of mental disease through Medicine; the effort to do so through philosophy and psychology has failed. They are useful till our knowledge of the body will

have grown to larger stature. In therapeutics they deal well enough with symptoms, but a sharper sword is to-day being forged by Medicine to deal with the nature of mental illness itself.

Often one hears a plea from the psychologist for the consideration of the human animal as a whole. We have often heard physiologists speaking of the cerebrum, the cortex, acting as a whole. I have never been quite able to understand clearly what is meant by the physiologist when he speaks of the cortex acting as a whole. Head uses the phrase in his writings. I have always thought it a very confusing term, but I think I do understand, or approximate to understanding, what is meant by a human being acting as a whole, in that the metazoic, multicellular animal functions in each act as uniquely, in as unified a manner, as does the unicellular animal. Each behavior, each act of behavior, is the resultant of the forces that are in the organism, so that I think one may properly speak of the human being as acting as a whole, which is far from being the same as feeling or thinking as a whole.

Many lately have spoken rather adversely of Freud's philosophy, Freud's theory, as being a purely motivistic relation of human behavior. Now, unfortunately, those who speak decidedly on any side in this rather amorphous world get the reputation of being prejudiced persons.

Our antagonism, if it can be called antagonism—and it is only criticism—to psychoanalysis is not that it is wrong but that it is true only in part. It is one angle of view only. Our mind symbolizes everything we see, we see but one aspect at a time and that first and clearest that appeals to the consciousness of the observer. The important thing is to try to have more than one angle of vision, but the psychoanalyst seems to see like Polyphemus with but a single eye and one cannot but feel that there is a certain belief in their circles that they have absorbed psychiatry. The psychoanalyst feels that only he is truly a psychiatrist and that unless one is a psychoanalyst one is not a psychiatrist, and that he who is not for them is against them. This is on the banner of all religions. They suggest one has no right or power to have a notion or an idea of human personality in other terms than theirs. Shakespeare was not a psychoanalyst, Voltaire was not a psychoanalyst, George Moore and Thomas Hardy were not

psychoanalysts, but I venture to say that these men know more of the human spirit and the motivistic phenomena that prevails in the human heart than most of Freud's disciples. The great artists are perhaps the greatest of all psychiatrists. Their understanding may be better than our knowledge. So, I feel the Freudian contribution to be this: Freud has demonstrated that there is a phylogeny of personality. By that I mean that each of us is a microcosm of our race. From the egg to death we pass through stages in our body at least similar to those through which the whole race has passed. Freud has made it clear that in our emotion, in our striving, in the preponderance of this instinct over that at different periods of our lives, we have a like phylogeny of personality, that the child is a savage, that its sexual instincts emerge by gradual progression from a preoccupation with one orifice to a preoccupation with another. That is a true contribution to knowledge. Freud himself, however, has lately said that he is not sure whether it is a contribution to therapeutics but at least it does make it clear how our instincts developed inside the microcosm of each man's body. We have vestigial remains like gillslits and others like scatological tropisms, but we cannot describe the total body in terms of the one or the total personality in terms of the other.

This analysis of behavior has been, nevertheless, a great compensation against the materialism and dogma of the "cellular" epoch which perforce evolved in the nineteenth century. However, if we are to think solely in terms of this reversion to dualism, this ecclesiastical view of man, which has beset our minds and lamed our thoughts for two thousand years, if we are to think that such patterning and docketing is the whole of psychiatry then, I say, we are sinning against the Holy Ghost, the Holy Ghost of Medicine.

We must remember the plain facts of fever psychosis, the fact of glycosuria in shell-shocked soldiers. If we imagine each human being to be a single unswerving, unchanging uniformity against which stimuli are directed, and if we postulate that each such individual invariably reacts to stimuli in the same way as does every other individual, then we are saying something contrary, I am sure, to human experience and to common sense.

Individuals vary as much in their personalities and reactions as in their faces.

They differ, as even Freud has stated, in their inherited endowments. I am not sure whether "inherited endowment" is an absolute fixed concept. I am even inclined to question the dogma that there is no such thing as the inheritance of acquired characteristics. Indeed, part of our trouble in this whole discussion is that we see the problem narrow and we see it short. We think in too small units of time. We cannot see the results of inheritance of acquired characteristics because of the paltry shortness of our lives and, because our eyes are holden, our minds are holden also.

There is a good deal of evidence in the animal world that such transmission of acquired characteristics exists, that a defective germinal cell will produce a defective descendant and that the defective descendant will procreate a defect in his descendant. It has been done by an injection of pulverized lens tissue of rabbits into fowls whose serum thereafter put into pregnant rabbits produced creatures with defective eyes inherited to eight generations. If that can happen in the lower animals it may happen to us; only our nervous systems are so complex, they are so much more evolved, that we cannot see them in terms of our little lifetimes.

Good heredity and the care of the stock is the most important factor in the prevention of the psychotic state. Of course, psychogenic disease does exist. There are the results of great injury, great shock, but consider in this regard the results of the greatest disasters and the greatest emotions, consider the emotions of war. The statistics of the last war, which was a great laboratory for this investigation, show that while psychoneuroses were very frequent, in the tens of thousands, there was no increase of psychoses in the troops over those afflicting the same number of people in civil life. How do you account for that? If our psychoses are produced only by biological pressure how do you account for the absence of an epidemic of psychoses in war? You cannot, Of course, the pressure of the herd, the pressure of the sex, the pressure of hunger impinge on and mould, modify and direct, the growing organism. A man, who may be a potential homosexual, may be made a complete homosexual by experience, but I believe he must be *nearly* a complete homosexual not to resist the normal trend of physiological living.

I dislike the new term "mechanistic approach." I think this word does its idea much less than justice. We do not think of using or advocating a mechanistic approach solely. What we advocate is that we should employ *all* our physiological knowledge, all our anatomical knowledge, all our social, our anthropological knowledge, our bacteriology, our histology, our morphology, bringing them in coordinated cohorts to find out the nature of the mind of man instead of limiting our approach by an arbitrary symbolistic theory. We should treat man as a dynamic and physiological whole.

Our attitude is more a biopsychic approach than a mechanistic approach. After all, who would think of trying to discover the meaning of Sight, of Vision, without examining the eyeball? Nobody. If we should think of Sight without any reference to the eye, without any reference to the physiology of the retina, with no reference to the brain tracts or to the ability of the cortex to gather up and differentiate sensations that come into it and to unify them, all purely in a physiological manner, we would know nothing of sight. Very well. What we would know of Sight, lacking such consideration, would not be Sight but esthetics, visual esthetics, and we would be dwelling in this, too, as among the Mysteries.

We all err in trying to explain the unknown by something equally unknown. We look up in the dictionary the word "vitality" and we find it means "zest;" we look up "zest" and find it means "vitality." If we do not know the meaning beforehand we may as well not open the book. All things may be viewed in several ways. The first chapter of Genesis is just as true as Edwin Clodd's "Story of Creation." We *must* believe that we cannot have intellect, dreams, or ecstasies without a fine inherited neuronc endowment. The strategic outlines and boundaries of mind are laid down by heredity, its tactical plan by social inheritance, by education and by the moulding pressures of sex, the herd and hunger. All, all may be destroyed by infection or by injury. In fine, we doctors have to remember that man is lowly in his beginning, agonized in his growing, most wonderfully and variously made in mechanism, and that there is in him a spirit that o'er-leaps the stars.



# PLASTIC SURGERY IN THE REMOVAL OF EXCESSIVE CUTANEOUS TISSUES OBSTRUCTING VISION

KEITH KAHN, M.D.  
New York City

The condition to be described in this paper rightfully deserves closer attention than is usually given it. Although it is the ophthalmologist who should be consulted, most patients seek the aid of the plastic surgeon; for frequently they come to be beautified rather than to have their impaired eyesight corrected.

The usual complaint of these patients is excessive growth of tissue about their eyes. In many cases the vision is unimpaired, and the unsightly tissues are removed in order to eliminate a social handicap; however, in the majority of the patients, their field of vision is partly obstructed, and in some cases it is almost completely obliterated. It is, as a rule, then only that the oculist will detect the cause of impaired vision; for he will search rather for organic defects than for mechanical abnormalities. The patients become far-sighted: they see exceptionally well at great distances, but experience considerable difficulties in focusing on objects near at hand.

There are two types of the condition: (1) the relaxed, and (2) the edematous type. In the *relaxed* type, the excessive skin is very thin and hangs like a curtain, forming a small slit between the upper and the lower lids through which the patient can see. The upper eyelid and eyelash are completely concealed. The grooved space between the eyebrow and the eyelid is obliterated (Fig. 1a). In many cases the subcutaneous tissue is *edematous*. Here, the skin forms a bulging roll over the eyelid, but because of its thickness the eyelashes are left free. If there is a great deal of relaxation, the patient finds it necessary to tilt the head backward in order to see more clearly. It is then that the condition assumes the appearance of a physiological or mechanical ptosis (Fig. 1b).

**Incidence.**—The yellow and brown races possess a hereditary predisposition to this condition. In the black and white races, environment seems to play a greater rôle than heredity in producing this physiological deformity. Outdoor life is a contributing factor. In the temperate zones where life is largely indoor and where artificial light is employed more frequently, the re-

dundant flesh is likely to be edematous. On the other hand, in tropical climates, where sunlight and fresh air are abundant, the offending structures are usually very thin and free from edema.

Among men, those who have to shoulder grave responsibilities, which cause them to squint or frown, are the subjects most frequently encountered. Doctors, dentists, lawyers, railroad and civil engineers, sea captains, and a large percentage of judges past 50 years of age head the list. As to women, those massaging the eyelids daily with beauty preparations are most likely to be effected. Where environment is the causative agent, the condition is seen in middle or old age, while in cases in which heredity is the predisposing factor, it is also found among younger people. In the series of cases treated by the writer, the patients' ages ranged from 19 to 71 years. The author has performed this plastic operation approximately 500 times. There were about 100 cases in whom vision was gravely obstructed, and of these 100, about 90 per cent were over middle age.

**Impairment of Vision.**—The vision may be impaired in the following ways:

(1) By the increased weight and prolonged pressure of the redundant flesh upon the eyeball.

(2) By obliterating part or all of the field of vision.

(3) By improperly shading the eye, which in turn results in incorrect and insufficient reception of light.

(4) By slight drooping of the lids. The tissue filling the grooved space beneath the eyebrow pushes downward on the lid, thus preventing complete elevation without special effort (lifting of eyebrows).

**Removal of Tissue.**—In order to determine the amount of relaxed tissue, the skin is held between the fingers while the eye is closed (Fig. 6); then, as the eye is opened, the skin is pulled outward and downward. After suddenly releasing the skin from the finger hold, one can note the extent of relaxation as the skin very slowly contracts in a vain effort to free completely the field of vision.

In order to obtain a free operating field, it is essential that the eyes remain closed

during the operation. Therefore the operation should be performed under local anesthesia. After the patient's face has been prepared, the redundant tissues are grasped in special clamps and the patient is permitted to open and close his eyes to determine if there is any undue tension and to insure comfortable closure after the clamped tissues are removed.

To produce anesthesia, the author uses 2 per cent novocaine. Very small, straight scissors are employed to remove the clamped tissue from its base, leaving a

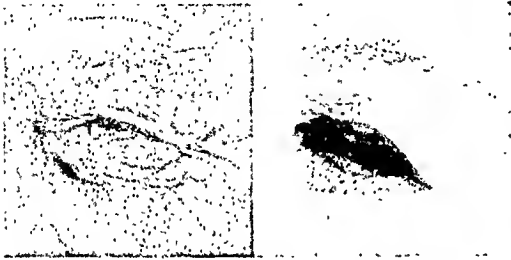


Fig. 1.—(a) Edematous type. Eye open. (b) Relaxed type. Eye open.



Fig. 2.—Eyes before operation.



Fig. 3.—Same case as Fig. 2. Appearance of eyes when relaxed tissues are elevated.

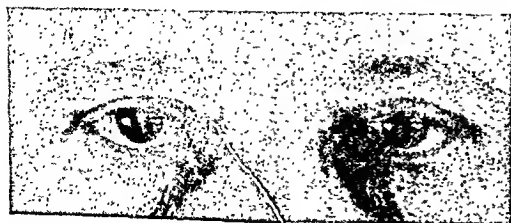


Fig. 4.—Same case as Fig. 2. Ten days after operation.



Fig. 5.—Same case as Fig. 2. Nine years after operation.



Fig. 6.—Method of determining extent of relaxation.



Fig. 7.—(a) Before operation. Eyes open as patient looks slightly downward. (b) Ten days after operation.

jagged, angulated line of incision (The angulated type of incision is used to overcome the slight contraction which tends to convert it into a straight line without contracting the ends of the cut. It also breaks up and diffuses the shadow which then blends with the background, in many cases entirely eliminating any visible scar.) In the edematous cases, part of the edematous tissue is removed along with the more superficial skin layers. There is very little bleeding and therefore it is seldom necessary to clamp a bleeder—and never to ligate—except on rare occasions during the removal of tissue near the external canthus when a small branch of temporal artery is encountered. The incision is closed with No. 1 black silk, Ford single knot suture, and covered with carbolated vaselin. No dressing is applied. The patient is given a pair of dark glasses to prevent public inspection. The vaselin is renewed daily. The sutures are removed on the third or fourth day, depending upon the texture of the skin and the patient's healing ability.

After the removal of the sutures, a flexible collodion dressing is applied, this is not disturbed and will drop off of its own accord on the seventh to ninth day. The operation is without pain and the inconvenience is surprisingly small.

*End Results*—In regard to the improvement of vision, the results are extremely gratifying in cases which are not accompanied by organic disturbances. The rejuvenating effect upon the eyes and face is very noticeable. The patients are very enthusiastic about the results and in many cases are able to cast aside their reading glasses.

In the author's series of cases, none required a second operation.

The purpose of the writer in presenting his observations and results with this type of cases is to bring the attention of the profession to this condition as an entity in plastic surgery and to stimulate more active research in determining the exact degree of visual improvement in these cases.

769 SEVENTH AVE.

## ANNOUNCEMENT

The first International Assembly of the Interstate Post Graduate Medical Association of North America to be held east of the Alleghenies is to take place in the public auditorium of Philadelphia, Pennsylvania November 5th, 6th, 7th, 8th and 9th 1934, with pre Assembly clinics on November 3rd and post Assembly clinics on November 10th in the Philadelphia Hospitals.

The public auditorium is located in the University area and across the street from the Philadelphia General Hospital, thus assuring the Assembly close access to an abundance of clinical material.

The aim of the program committee with Dr. George W. Crile as chairman is to provide for the medical profession of North America an intensive postgraduate course covering the various branches of medical science. The program

has been carefully arranged to meet the demands of the general practitioner, as well as the specialist. Extreme care has been given in the selection of the contributors and the subjects of their contributions.

The Philadelphia County Medical Society will be host to the Assembly and has arranged an excellent list of committees that will function throughout the Assembly. A most hearty invitation is extended to all members of the profession who are in good standing in their State or Provincial Societies, to be present and enjoy the hospitality of Philadelphia "the City of Brotherly Love." A list of distinguished teachers and clinicians who are taking part on the program will be found on page ix advertising section of this Journal.

## CANCER DEATHS UP SHARPLY

Cancer statistics just compiled for 1933 by Dr. Frederick L. Hoffman, consulting statistician show a sharp increase in mortality over 1932. Dr. Hoffman's report is published in *The Speculator* insurance publication. The figures, the report says also mark a continuation of the steady advance in the cancer mortality rate recorded annually since 1906.

"Cancer in 1932," the report says "exact a heavier toll of lives in American cities than ever before. Compared with 1932 there was an increase in the rate for fifty American cities with uniform records dating back to 1906 from 122.7 per 100,000 to 124.7.

"The colossal magnitude of the problem is better illustrated by the statement that in the fifty cities under review, with an aggregate population of 32,000,000 in 1933 there have been 722,274 deaths from cancer since 1906, or during a period of twenty eight years. The figures show an increase in the rate from 71.6 per 100,000 in 1906 to 100.2 in 1920 and 124.7 in 1933.

"Cancer is now the second leading cause of death, following diseases of the heart considered as a group. However disagreeable the conclusion, we apparently have not made the progress anticipated for the disease continues to increase regardless of strenuous efforts to stem its ravages in the American population."

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## EDITORIALS

### Why the Copeland Bill Died

Many physicians have no doubt found it hard to understand why the Copeland Bill failed to pass the recent session of Congress. It was framed to protect the public against the false and fraudulent claims of the patent-medicine makers, and while the Congress seemed ready to revise and revamp our whole system of economics and politics to help business out of the slump, yet it refused to pass this measure to safeguard the people's health. This seems a rather strange attitude at the very least for a body of legislators elected to serve the public interest.

The aim of the Copeland Bill was to remedy the defects of the Food and Drug Law of 1906, which forbade the nostrum makers to print false claims on the labels of their concoctions. That law neglected, however, to bar false claims in advertising, a point soon perceived by the medicine vendors, who ran riot with glamorous statements in their ads, but sang very small on the labels. Even at that the public were protected for years by the high standard of advertising ethics maintained by the

more 4.—Same case as Wg. papers and magazines  
why extravagant curative

claims. When the slump hit them, however, the high standards fell, and in the last few years the advertising pages have been sprinkled with "cures" that must have brought a sad smile to the face of the physician.

The Copeland Bill would have ended that sort of thing. It would also have put a stop to the sale of cosmetics that are injurious, some of them even causing blindness. As the session of Congress wore on, however, it became evident that the bill was not likely to pass. On May 16, Senator Copeland found it desirable to explain to the Senate that his bill was not at all the same as the "Tugwell Bill" which had "met with such violent opposition throughout the country." The attitude of the Senate, however, remained cold and Senator Copeland finally expressed the hope that if his bill did not pass, "some future, and perhaps wiser, Congress may see fit to enact it."

The mysterious demise of this measure seemed to call for something of a post-mortem examination, so the editor of this journal wrote to Senator Copeland to ask the cause of death. To this inquiry the Senator replied in no uncertain language, as follows:

"The lingering death of the Food and Drug Bill was the result of unreasonable prejudice and unbelievable selfishness.

"Prejudice against Dr. Tugwell, whose name was attached to the original bill, and, even though the Tugwell part was eliminated, had much to do with the unfriendliness of Congress.

"The selfishness of certain proprietary and cosmetic concerns was the last and perhaps the most deadly contributing cause."

This throws an illuminating ray of light on the way in which our laws are made. The failure of Congress to pass this bill is causing remark in medical circles all over the country. The out-of-date Food and Drug Act of 1906 is all that stands between the public and "the gigantic food and cosmetic and patent-remedy industries" observes a medical journal in Minnesota, and "it is obvious that these industries find aid and comfort in things as they are."

The situation is reminiscent of a scene years ago when the House Ways and Means Committee was holding hearings on a new tariff bill. Spokesmen for various interested industries were being heard, when a stranger appeared and asked permission to give his views. "Who do you represent?" the Chairman asked him. "I represent the public," he replied. The committee burst into a roar of laughter, and he was shown the door. Now we seem to have another case where everybody's interests have a hearing except the public's. We can only hope with Dr. Copeland that a future Congress will be "perhaps wiser."

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### Chinese Medicine

The medical customs and practices of a nation embracing one-fourth of the human race are certainly worth a few minutes of our attention. A little book, entitled "Chinese Medicine" has just appeared that packs into less than 200 pages the main points of the Chinese system of healing. And it is not done on the plan, either, of the man who wrote a book on Chinese philosophy by reading a book on China and a book on philosophy and combining the two. It is, in fact, written by the Dean of the Medical School of the West China Union University at Chengtu, in Szechwan Province, William R. Morse, M.D., L.L.D., F.A.C.S., and is published by Paul B. Hoeber in New York.

Imagine, if you can, the countless doctors, quacks, mountebanks, and what not in that vast land dosing the sick with powdered bones of monkeys, bears, and tigers, bats' wings, infants' brains, dragon's blood, bear's gall, earth worms, tree grubs, toad's skin, etc. Imagine itinerant doctors thrusting hot and cold needles, some of them eight or nine inches long, into various parts of the body to cure assorted ills. If the patient dies, it is the disease that kills him, of course, not the needle!

We must keep in mind, however, that the medical profession in China is not to be judged by the performances of the charlatans, any more than is the medical profession in this country. Any one who likes

can practice medicine there, so it is true that the land is overrun with medical fakers, but at the same time a body of serious and learned physicians exists, who have a system of medicine that has been in use for thousands of years.

The basic principles of this system are the Yang and Yin, or the masculine and feminine forces. The Yang is creative, the Yin destructive. Everything is classified under them. Heaven, the sun, day, life, heat, the spiritual, acid, the organs, energy, fever, etc., are Yang, while the earth, the moon, death, cold, the material, the base, the viscera, inertia, chill, etc., are Yin. This classification runs through thousands of objects, everything imaginable. The medical importance of it is that when the two principles are working in harmony, there is health; if not, there is illness, destruction, death. These two terms run back more than 4,000 years.

The next principle in the Chinese medical philosophy is that everything animate and inanimate is composed of five basic elements which were formed and are controlled by the Yang and the Yin, and that the proportions of the Yang and the Yin are constantly changing in a continual ebb and flow. This makes the task of the physician clear. If the patient is ill, he is lacking in Yang, or life-giving substance, therefore he should take something rich in Yang, such as cinnabar, gold, silver, jade, pine tree, peach, crane, cock, or tortoise. Cinnamon has great power. Legend relates that Chao, the hunchback, took cinnamon for twenty years, and hair grew on the bottom of his feet, he could walk 100 miles in a day and lift 1,333 pounds. Peach resin, too, steeped in the secretion of mulberry ashes, if eaten is reputed to cure all manner of diseases. "If eaten for a long time, one's body becomes buoyant and luminous. On a dark night the body will appear as the moon." Of course, just how desirable that would be is a question.

Air is held to be a vitalizing substance, and he who breathes expertly keeps away evil influences. Patients with colds or cold extremities are treated by having young boys and girls blow on their navels. Blowing on wounds stops bleeding, on the joints

it cures rheumatism and arthritis. The air is supposed to be "alive" from midnight to noon and "dead" from noon to midnight. Demons and devils bring disease, and tom-toms and firecrackers drive them away. If the patient dies during medical treatment, it is the disease that kills him, but if he dies after surgical treatment, the relatives hold that the doctor killed him, and their feelings can be assuaged only by large cash payments, hence surgery is rare in China.

The opinion is almost universal among the Chinese that all the doctor needs to do to diagnose any disease is to feel the pulse, and pulse interpretation, we are assured, is, in fact, *"the foundation of practice of medicine by the better class of Chinese physicians."* The procedure is extremely delicate and complicated, and may take from ten minutes to three hours. Each wrist has six pulse locations, and each location shows three qualities of Yang and three of Yin, so there we have 72 subdivisions and differentiations to start with, and each one may reveal from eight to twelve varieties of pulse. The really skillful doctor, too, will allow for age, sex, temperament, weight, and growth of the patient, and not forget the time of day, season of the year, influence of the stars, date of birth, and all other related considerations.

With all these in mind, then, the physician may find the various twelve pulses buoyant, sinking, feeble, bounding, fragmentary, continuous, fatal, slippery, small, empty, hollow, taut, hard, wiry, soft, scattering, slender, hidden, tremulous, running, intermittent, and irregular. These are only a few. There are said to be at least 51 chief types of pulse recognized as a groundwork in examination. Twenty-seven indicate a fatal ending of the disease.

It is easy to find material for ridicule in all this, of course, but Dr. Morse, who knows the Chinese doctors well and has lived among them many years, testifies that not a few are real masters of medicine. They seem to have "an intuition akin to the knowledge of the 'old salts' in their grasp of weather conditions." Many of the remedies, perhaps, are useless and

nauseating, "but many are very useful and have been used for centuries for the same diseases and in somewhat similar manner as they have been and are used in the West." Take toad skins, for example, which are used for dropsy. An analysis of toads' skins has shown they possess a digitalis-like substance, so that in this and many other Chinese medications, Dr. Morse notes, it is shown that their empiricism discovered and used substances which scientific investigation in Western laboratories now accepts as having a scientific basis.

Whether we can learn anything useful from their system of medicine is open to grave doubt, but in glancing through the pages of this entertaining and scholarly volume one notes that Shen Nung, one of the Chinese gods of medicine, who lived in 2767-2687 BC, "is said to have had the power of looking through his anterior abdominal wall and viewing the action of his stomach. He utilized this ability in watching the action of drugs he had eaten." If Shen Nung could be induced to return to earth, his services at least might be of considerable service.

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### The Craze for Regimentation

The mania for black shirts, brown shirts, red shirts, blue shirts, and gray shirts here and there around the world seems to some observers to be a symptom of a wide trend toward regimentation, a timid surrender of individuality and independence, and a retreat into the refuge of mass action under the authority and command of some leader or dictator.

The threatened move toward socialized medicine is part and parcel of this general urge to organize and regiment everybody. One medical writer calls it "guinea-pigomania," in which we are all guinea-pigs under experimentation.

Independence is going out of style; the old freedom of personal action which produced the fine relationship between doctor and patient is in danger of becoming only a memory.

We see throughout the world, in fact, what looks like a revolt against freedom, a widespread distrust of liberty, due not to a

love of discipline but to a sheer failure of nerve, a lack of self-confidence. That is how it appears to a British historian, Mr. John Buchan. He sees "an impulse to huddle together and to seek salvation in herds, a fear of being alone, a craving to surrender the will to any authority which will save trouble." It is a symptom of the depression, which has produced a defeatist psychology. The danger is that this spirit may lead us into a regimentation of many features of our national life, including medicine, just as the depression is ending, and we shall emerge into better times saddled with this incubus which is totally foreign to the American character and to all that has made our country the admiration and envy of the world.

If there is any one thing that marks America out as distinct and different from other lands, it is the spirit of personal independence. Our country was founded in that spirit in the days of the Boston Tea Party and it has continued in that spirit down to the present time. Immigrants coming to our shores in millions declare that they come because "America is a free country." In their old home lands the people are herded and regimented until even to day in some countries of boasted civilization and culture the citizen does not dare breathe a word of criticism of the dictator who cracks the whip over the heads of the people. Our national songs celebrate America as the land of the free. Is it possible that just because we have experienced a business slump, we are willing to throw all this overboard and imitate the herded and regimented peoples of the Old World? And even if we do not go to the lengths that some of them have gone, are we going to regiment the medical profession and have them running here and there at the word of some political appointee who lands the job of bossing the state or city health-machine?

For our part, we believe that the spirit of freedom in America still lives. Our land is filled from the Atlantic to the Pacific with the sons and daughters of those who came here to escape the regimentation that was and is the curse of the old lands now showing signs of decay. That

a nation of such ancestry should deliberately saddle itself with this handicap is unthinkable. And those who are trying to bring it about can succeed only if the rest of us sit idly by in a mood of defeatism and let them do it. No profession in America has more influence and commands more respect than the medical profession, and a united stand at this time for old-fashioned American independence will defeat this new peril to our liberties.

#### District Branch Meetings

The date schedule for the Annual Meetings of the District Branches has been compiled as follows:

- First District—October 24—place to be announced later
- Second District—November 15—Garden City Hotel
- Third District—September 19—Potts Memorial Hospital (eight miles south of Hudson on the Albany-New York Post Road)
- Fourth District—September 21-22—Gloversville
- Fifth District—October 2—Syracuse
- Sixth District—September 26—Cortland
- Seventh District—September 27—Auburn
- Eighth District—October 4—Jamestown

The JOURNAL urges all members to attend the meetings of their own District Branches.

#### AMERICAN CONGRESS OF PHYSICAL THERAPY

The Thirteenth Annual Scientific and Clinical Session will convene at the Bellevue Stratford Philadelphia, September 10, 11, 12, 13, 1934. On the evening of September 12 a joint meeting will be held with the Philadelphia County Medical Society. Information may be secured from the President of the Eastern Section, Dr. John D. Currence, Hotel New Yorker, New York City, or the Secretary, Dr. Madge C. L. McGuiness, 1211 Madison Avenue, New York City.

Only 7 deaths occurred among the obstetrical patients during the past year at the Lying-In Hospital in New York City, according to its 135th annual report made public in July through the United Hospital Fund. The report disclosed a new high record in the number of mothers and babies cared for in the institution. Last year the hospital treated 4,387 obstetrical patients in its indoor and home delivery services and 626 gynecological patients, a total of 5,013. The 7 deaths among the obstetrical patients during the year made the maternal mortality rate 1.9 per 1,000 live births compared with 3.3 the previous year and 5.93 for the entire city in 1932. The infant mortality during the first two weeks following birth was 3.86 per 1,000.

## BOOKS REVIEWED

1. JEROME WEISS

Dr. Kovacs has compressed into a small volume a fund of information which only a whole library could cover in detail. While reading this book the reasons become clear why physical therapy is and should remain a part of medical practice. The error of its designation entirely to lay workers is apparent. Though written for lay information the book can be read to great advantage by the medical student and practitioner. It is well written, clearly printed, and adequately, though amusingly, illustrated. The book deserves a place in every public and home library, and the writer is to be commended upon the thought behind the work as well as its delightful presentation.

JEROME WEISS



**A PATHOLOGICAL STUDY OF THE "STRAWBERRY" GALLBLADDER****H HAMILTON COOKE MD***Boston Mass**Formerly Fellow in Surgery The Mayo Foundation Rochester Minnesota**This essay was awarded the Merit H Cash prize of the Medical Society of the State of New York on April 4 1933*

The recent outstanding additions to our knowledge of the structure, function, and pathology of the gallbladder have been of great value in the clinical interpretation and rational surgical management of cholecystic disease. The widespread use of cholecystectomy has provided an opportunity for the pathologist and surgeon to observe a large variety of lesions formerly seen only at necropsy. The minute study of numerous fresh surgical specimens, moreover, has made it possible to extend observations from terminal anatomic changes, to histologic structural changes produced by, or associated with, anomalies, infections, metabolic dysfunction, neoplasms, and stones.

Many conditions have been regarded as partially or completely responsible for the deposit of lipoidal material in the mucosa of the gallbladder. Virchow,<sup>9</sup> in 1857, described microscopic deposits of lipoidal material in the gallbladder. He believed that lipoids were absorbed in the gallbladder by a physiologic mechanism identical with that by which fats are absorbed in the small intestine. Aschoff, in 1906, after a number of experiments, concluded that cholesterol in the wall of the gallbladder is absorbed from the bile in a mixture of neutral fat. Moynihan, in 1909, presented a macroscopic description of lipoidal deposits in the mucosa of the gallbladder. MacCarty,<sup>14</sup> in 1910, published the first detailed macroscopic and microscopic study of lipoidal deposits in the gallbladder. Irwin and MacCarty,<sup>10</sup> in 1915, studied 85 fresh specimens of papilloma of the gallbladder that were found on examination of 2,165 gallbladders removed for cholecystic disease. The papillomas were yellow or white and appeared to be like hypertrophied villi. In the stroma were found numerous large, round or oval cells

which contained fat or a fat like substance. MacCarty observed macroscopic lipoidal deposits in 936 (18 per cent) of 5,000 gallbladders removed at operations; later, he studied the early lesions in 4,998 gallbladders. Infiltration of the epithelial cells by lipoidal globules and the presence in the submucosa of large spheroidal cells filled with finely granular lipoidal material was considered to be one of the early lesions of the gallbladder. Boyd,<sup>5</sup> in 1923, studied 100 gallbladders removed because of cholecystic disease. The mucosa of the "strawberry" gallbladder was found by chemical examination to contain as much as 100 times more cholesterol than the mucosa of the normal gallbladder. Mentzer,<sup>17</sup> in 1925, studied 134 strawberry gallbladders which were found at 633 consecutive necropsies. He found that the majority of persons with fatty changes in the wall of the gallbladder also had fatty changes in other parts of the body. Judd and Mentzer,<sup>11</sup> in 1927, studied the clinical history of 500 patients with cholesterosis and 500 patients with cholesterosis associated with cholelithiasis. In 200 cases of cholesterosis, the cholesterol content of the blood was determined by repeated examinations, an appreciable increase over the normal standards was found in each case.

The material used in this study was composed of 585 strawberry gallbladders among which were 85 fresh specimens. Each specimen was examined grossly and microscopically. Frozen sections were stained by polychrome methylene blue, hematoxylin-eosin, sudan IV, scarlet red, Nile blue sulphate, and silver carbonate. Paraffin sections were examined by hematoxylin-eosin, Weigert's, van Gieson's, and mucocarmine stains. Frozen sections were studied with the polarizing microscope. Microchemical tests for lipoids were made

according to the technic of Strzyzowski and Boyd. Determinations of cholesterol were made by the technic of Salkowsky and Moleschotts.

Macroscopic examination of the 500 specimens of strawberry gallbladder revealed marked variation in the quantity of visible lipoidal material in the mucosa. The entire number was divided into three groups according to the amount of lipoidal material. Group 1 contained the smallest, Group 3 the largest, and Group 2 an intermediate quantity of lipoid. On the basis of this classification, 332 specimens were placed in Group 1, or slight strawberry gallbladders; 76 specimens in Group 2, or moderate strawberry gallbladders, and 92 specimens in Group 3, or marked strawberry gallbladders.



Fig. 1.—Marked strawberry gallbladder.

The only lipoidal material visible in several specimens in Group 1 consisted of a few isolated pinhead granules along the ridges of the tallest folds. In Group 3 most specimens, on the contrary, contained large quantities of lipoidal material, usually uniformly distributed over the entire surface of the mucosa. The lipoidal material in these specimens occupied not only every ridge of the tall primary and secondary folds, but also formed knob-like solid or pedunculated projections at the juncture of the folds. Definite papillomas were present in all three groups but were larger and more numerous in the specimens of marked strawberry gallbladder. The lipoidal material stopped abruptly at the juncture of the gallbladder with the cystic duct and was not observed in the cystic duct.

There is no unusual structural change in the appearance of the folds free from lipoidal material in the specimens in which the lipid is confined to a portion of the mucosa. The accumulation of the lipoidal

material in the folds of the mucosa produces definite changes which vary in degree according to the quantity of lipoidal material and the extent of associated pathologic changes. The folds do not retain their tall, thin, tenuous structures, but become bulbous, flask-shaped, mushroom-shaped, and, in the marked examples, the base of the fold becomes transformed into a thin pedicle whereas the free portion on cross section has an expanded balloon-shaped appearance. The wall may vary from normal thickness to the massive hypertrophy seen only in cases of advanced gangrenous or fibrous cholecystitis.

The histologic appearance of sections from specimens of strawberry gallbladders may vary markedly. The variations are principally dependent on the quantity of lipoidal material present in the mucosa and the degree of associated pathologic changes in the different layers of the wall. Marked structural variations may be present in sections from various portions of the same specimen and, occasionally, even in different areas of the same section. The main portion of the lipoidal material is always found in the folds of the mucosa. Small quantities are occasionally present in the deeper portions of the mucosa that lie between the base of the crypts and the inner portion of the muscular layer. Lipoidal material in the tunica fibrosa externa is rare and, when present, is found in the cytoplasm of macrophages that apparently have migrated from the interstitial portions of the folds.

The lipoidal material in the epithelial cells is almost always found in the distal portion of the cells. In sections stained by scarlet red it is visible as a pink to dark-red globular material. The quantity contained in the epithelial cells varies considerably. In some cells only a few globules are seen, whereas in others the cytoplasm distal to the nucleus is so distended by a coalescent foamy mass that, in extreme cases, the cells may assume a goblet shape. In sections stained by Nile blue sulphate, the subepithelial lipoidal material took various shades of color. Most of the coalescent lipoidal material appeared as dark-blue and globular, whereas the smaller, more diffusely distributed masses took a bright-blue or azure stain.

The largest quantity of lipoidal material in the strawberry gallbladder is found in the cytoplasm of large, peculiar mononuclear cells that are situated in the stroma of the folds. Some villi contain only a few

of these cells, whereas in others the lipid-containing cells are so numerous that they compose the entire interior portion. In the latter condition the epithelial cells rest directly on the lipid cell. The size of the mononuclear lipid cell varies according to the quantity of lipid in the cytoplasm. These cells usually measure from 20 to 60 microns in diameter; they are usually rounded, oval, or slightly angular but may assume different shapes depending on the structure of the fold and the degree of associated inflammatory changes. The cytoplasm appears foamy, as if it were composed of numerous small globules. The nucleus is often covered or obscured by the globular material. The nucleus, which is small and rounded, may be situated near the center of the cell, but it is usually found about midway between the center and the periphery.

On examination with the polarizing microscope the intercellular lipoidal material exhibited marked anisotropic reaction. This reaction appears to be so definite that if an unstained section presented marked anisotropic reaction, subsequent histologic examination revealed numerous lipid-containing macrophages in the stroma of the villi. No lipoidal material was detected in the cytoplasm of any fibroblasts, fibrocytes, leukocytes, lymphocytes, plasma cells, or endothelial cells that lined the lumens of the arteries, veins, and capillaries. Extracellular or intracellular anisotropic material was rarely observed in the deep portions of the muscular layer or in the tunica fibrosa externa. When present, it was associated with such advanced structural changes in the muscular layer as those that marked separation of the muscle fibers of deep crypts and diverticula.

Macroscopic quantities of lipoidal material in the mucosa of the gallbladder may be associated with various degrees of structural changes. These structural changes are confined almost exclusively to the mucosa and consist primarily of change in the size, shape, and color of the folds. Although lipoidal deposits are observed in the mucosa of specimens of acute gangrenous cholecystitis with or without cholelithiasis as well as in gallbladders with thick fibrous walls, they are most commonly found associated with the condition described as chronic catarrhal cholecystitis.

On comparing numerous sections from specimens of slight and marked strawberry gallbladder it was observed that certain of the structural changes were present so

uniformly that they merited special study as the basis for histopathologic elucidation and possible explanation of this condition. The changes were: alterations in the structure at the base of the folds, alterations in the muscular layer, the presence of lipoidal material in the lymph spaces, and cellular reaction to the lipoidal material free in the stroma of the folds. In almost all specimens of lipoidal deposit in the gallbladder, more or less marked structural changes were present in the muscular layer. The bundles of muscle fibers which composed the inner border of the muscular tunic were displaced in an irregular manner. By this change the muscle fibers were

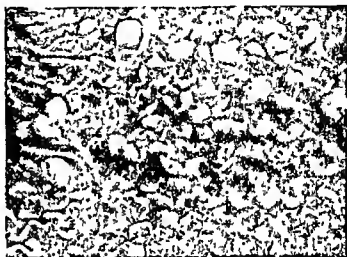


Fig 2—Large quantities of lipid in the folds of the mucosa ( $\times 10$ ).

frequently pushed inward to occupy the base of the folds. In some specimens the bundles of muscle fibers were not only present in the base of the folds but extended like a wedge into the deeper portions of the stroma. Variable quantities of lipoidal material were found in the apical portion of the folds which revealed this abnormal appearance at the base. The presence of bundles of muscular tissue appeared to act as a block to the dissemination of lipoidal material from the apical portion to the basal portions of the villus. The distribution of the lipoidal material appeared to be entirely limited by the presence of the muscle tissue.

The presence of macroscopic quantities of lipoidal material in the mucosa of the gallbladder could not be predicted by any criterion from examination of the exterior appearance of 85 fresh specimens of strawberry gallbladder. The color of the serosal surface of the gallbladders in this group varied from almost normal to such extremes as the dull grayish-white usually present in fibrous cholecystitis or the congested hemorrhagic discolorations of gangrenous cholecystitis. On palpation the

wall of an occasional specimen of strawberry gallbladder appeared to possess all of its original smoothness, elasticity, and suppleness in contrast to other specimens that revealed the usual evidences of advanced acute or chronic inflammatory changes. The only basis for the detection, macroscopically, of quantities of lipoidal deposit in the mucosa is the direct inspection of the mucosa.

#### COMMENT

Macroscopic quantities of lipoidal material in the mucosa of the inflamed gallbladder present a striking appearance. It is therefore difficult to understand why this gross appearance of lipoidal deposits in the mucosa was not described until more than fifty years after the observation of microscopic quantities of lipoidal material in sections of the wall. Moynihan suggested that the yellow masses were really small stones embedded in the mucosa. MacCarty showed, however, that the yellow masses were composed of clumps of lipoidal material in the folds of the mucosa. The sharp contrast between the red hyperemic mucosa of the acutely inflamed gallbladder and the diffusely distributed yellow clumps of lipoidal material suggested to MacCarty the appearance of a ripe strawberry. He therefore designated this condition "strawberry" gallbladder. The lipoidal material in the strawberry gallbladder may vary considerably in quantity and in distribution. In 332 of 500 specimens examined in the course of this study, lipoidal deposits were confined principally to the apices of the taller folds. Large amounts of lipid were, however, present in the primary, secondary, and in some of the tertiary folds of 92 specimens of the same group. In most specimens of strawberry gallbladder the lipoidal material is not restricted to any particular portion of the mucosa. The distribution of the lipoidal material was diffuse in 444 of 500 specimens, whereas it was confined to the corpus, fundus, or cystic portion of the mucosa in 56 specimens.

The presence of lipoidal material ends abruptly at the juncture of the cystic duct with the gallbladder. Large quantities of lipoidal material frequently accumulate at the juncture of the taller folds. These areas vary in size and may appear as polypoid masses attached to the mucosa by a thin, fragile stalk. The polypi are bright yellow and vary considerably in size and shape. On section they are found to be

composed of a large number of large, mononuclear cells which are distended by numerous globules, or to be a single homogeneous mass of lipoidal material. The free portion of the polyp is usually surrounded by a single layer of tall epithelial cells similar to those that cover the folds of the mucosa. In some specimens of strawberry gallbladder the lipoidal material is distributed as small punctate masses without any evidence of polypoid formation, whereas in some specimens the larger portion of the lipoidal material appears localized in a few polypoid masses.

The gross appearance of the strawberry gallbladder depends to a great degree on the condition of the mucosa. In the acutely inflamed strawberry gallbladder the mucosa is thick, red, and hyperemic, whereas in some specimens of chronic cholecystitis with lipoidal deposit the mucosa appears almost normal, except for the presence of the yellow clumps of lipoids.

In sections of the strawberry gallbladder the lipoidal material can be demonstrated by such fat stains as scarlet red, osmic acid, Nile blue sulphate, and Sudan III. On gross examination of a marked specimen of strawberry gallbladder the lipoidal material appears to lie as irregular masses directly on the apices of the villi. This is, however, not the case. The lipoidal material is found entirely within the villi and cannot be picked off or removed except by injuring the mucosa. In the mucosa, the lipoidal material is situated in the epithelial cells, free in the stroma, and in the cytoplasm of large peculiar cells. In occasional sections it is possible to find small numbers of free lipid globules and a few lipid-containing cells in the submucosa, but it is rare to find any lipid cells or free lipoidal material in the muscular layer or the tunica fibrosa externa. When gross lipoidal deposits are present in a particular portion of the mucosa, each epithelial cell usually contains lipid globules, but the amount of intracellular lipoids varies considerably. The cells nearest the apex of the tall primary folds always appear to contain the largest amount. The epithelial cells which line the tertiary folds and the crypts, contain relatively small amounts of demonstrable lipoidal material, even in marked specimens of strawberry gallbladders. Lipoidal material is, however, not present in all the epithelial cells of each fold in every portion of even the most advanced strawberry gallbladder.

Almost all of the intracellular lipoidal material is found in the cytoplasm of large peculiar mononuclear cells. These cells were first observed and described by Aschoff,<sup>3</sup> and later studied in detail by MacCarty. The cells measure from 20 to 60 microns in diameter. The small, round or slightly indented nucleus is often situated near the periphery. The cells are usually round, but may be hexagonal or elongated to resemble a fibrocyte. The quantity of lipoidal material in the cytoplasm of these cells varies considerably. In some sections the cells contain only a few lipoid granules which can be detected only on minute examination. In other sections the entire fold is packed with cells distended by small globules or coalescent masses of lipoids. When the cytoplasm is distended by lipoidal material, it is frequently impossible to demonstrate the nucleus. If the lipid is dissolved by alcohol, the structure of the cells can, however, be observed and the nucleus identified. On the basis of this histologic appearance Aschoff called these cells "Schaumzellen" or "pseudoxanthoma" cells from their resemblance to cells which form xanthoma. The Schaumzellen possess a highly developed power of phagocytosis. Structurally and functionally they are phagocytic histiocytes. The size and appearance of this cell depend on the amount of lipoidal material accessible for incorporation into the cytoplasm. It is a well-known observation that the macrophages can resemble in shape and structure other cells present in connective tissue, such as fibrocytes and fibroblasts, and although in some instances the cells of the connective tissue may be difficult to distinguish by morphologic criteria, the macrophages can be identified by their ability to phagocytize foreign material. By taking advantage of this property, Kusnetzowsky<sup>12</sup> and Anitschkow<sup>1</sup> have studied the macrophages of the subcutaneous tissue, and I have demonstrated by experimental methods the presence of macrophages in the gallbladder of the dog.

The serosal surface of the strawberry gallbladder may vary considerably in appearance, and the frequency of occurrence of the various types of inflammatory changes in surgical specimens of strawberry gallbladder will vary somewhat according to the number of specimens examined. There is, however, little doubt, as originally pointed out by MacCarty that

lipoidal deposits are most commonly found in gallbladders that are the site of those inflammatory changes usually designated as chronic catarrhal cholecystitis. Lipoidal deposits can, however, be observed in the mucosa of the acutely inflamed gallbladder. In 500 consecutive surgical specimens of strawberry gallbladder, 21 revealed acute cholecystitis. The inflammatory and cellular infiltration present in the tunica muscularis, tunica fibrosa externa, tunica

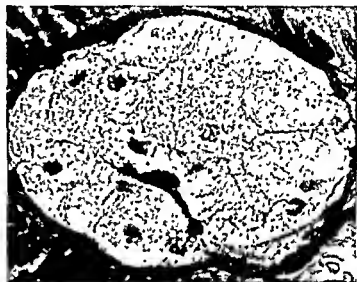


Fig 3.—Histiocytes distended with lipid globules in the mucosa in cases of marked cholesterosis ( $\times 1,000$ ).

subserosa, and serosa of a strawberry gallbladder may vary from very slight to the most advanced.

The physical characteristics of the bile were observed in 85 surgical specimens of strawberry gallbladders. In a number of instances the bile had a thick, dark, tarry consistency. Many other gallbladders, however, contained bile of a normal color and consistency. The appearance of the bile did not vary with the amount of lipoidal deposits in the mucosa but was dependent on the degree of associated inflammatory changes in the wall. This apparently had not been noted by other observers.

The nature of the lipoidal material in the mucosa of the strawberry gallbladder has been investigated by histologic, chemical, and optic methods. The histologic methods have consisted of an interpretation of the color changes produced in sections of strawberry gallbladders stained with osmic acid, sudan III, scarlet red, or Nile blue sulphate. The quantity of cholesterol has been determined by a modification of the method used by Bloor for the analysis of the cholesterol content of the blood. The optic reactions of the lipoidal material have been examined by the polarizing microscope. Among in-

investigators of this problem it is almost uniformly conceded that the material in the mucosa of the strawberry gallbladder is not composed of a single substance but is a mixture of various fats, lipoids, and soaps. Aschoff,<sup>2</sup> Gosset,<sup>8</sup> Policard, Boyd,<sup>6</sup> Chiray,<sup>6</sup> Lecene,<sup>13</sup> Blaisdell,<sup>4</sup> and Illingworth<sup>9</sup> consider the material to be a loose mixture of soaps, neutral fat, fatty acids, cholesterol, and cholesterol esters. Great emphasis has naturally been placed on the part played by cholesterol and cholesterol esters in this condition. In this study numerous observations were made of the color reactions, chemical reactions, and optic properties of the lipoidal material in the mucosa. The lipoid globules in the epithelial cells consist of a mixture of neutral fat, fatty acids, and soaps. No cholesterol or cholesterol esters can be determined in the epithelial cells by histologic, chemical, or optic methods. The extracellular subepithelial accumulations of lipoidal material, however, contain considerable amounts of cholesterol and cholesterol esters. The pseudoxanthoma cells contain large amounts of cholesterol and cholesterol esters in their cytoplasm. Suggestions have been made by several writers that strawberry gallbladder is only local evidence of a condition existing throughout the biliary tract. No proof has been published to support this contention. On the other hand, it is enough to point out the sudden arrest of the lipoidal deposit at the juncture of the gallbladder with the cystic duct to emphasize that if a similar condition exists throughout the biliary duct system, it must be exceedingly rare. At necropsy carried out by me in several cases in which there was a marked strawberry gallbladder, no evidence was found of a similar condition in the extrahepatic and intrahepatic bile ducts.

#### SUMMARY

Strawberry gallbladder is a condition in which macroscopic lipoidal deposit is present in the mucosa of the gallbladder. In 500 consecutive surgical specimens of strawberry gallbladder the quantity of lipoidal material could be designated as slight in 332, moderate in 76, and large in 92. The lipoidal material was not uniformly restricted to any particular area of the mucosa. In the 500 specimens the lipoidal deposit was diffuse in 444 (68.8 per cent), whereas it was found in various

portions of the mucosa in 56 (10.0 per cent). The strawberry appearance of the mucosa may be associated with all degrees of acute, subacute, or chronic cholecystitis, except in conditions in which the mucosa is desquamated or replaced by scar tissue. In 437 of 500 consecutive surgical specimens of strawberry gallbladders, definite gross and inflammatory changes were found in the wall, whereas in the remaining 63 specimens similar but less advanced changes were observed on microscopic examination. The structural changes which may account for accumulation of lipoidal material in the mucosa are: various degrees of fibrosis at the base of the villi and in the submucosa, accumulations of cholesterol-containing lipoids in plaque-like areas which resemble cross sections of lymphatic vessels, and the phagocytic reaction of local histiocytes to the presence of large quantities of free lipoids.

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## THE TREATMENT OF OBESITY

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There is considerable confusion about the treatment of obesity. This is due in part, to the generally accepted view that obesity develops from different causes and in part to the number of different methods employed in reducing weight. Furthermore practically all impressions regarding the value of any one treatment are gained from observations on anibulatory cases. However, when it is possible to put the subjects under scientific supervision with complete control over a sufficient length of time, the situation clarifies itself and the treatment of obesity becomes very simple. It then becomes apparent that the treatment is primarily dietetic irrespective of the etiology.

In this communication the authors will make a critical analysis of the common methods of treating obesity, emphasizing the low calorie diets as proposed by Evans and Strang<sup>1</sup> and finally present their experience with these methods and the conclusions that they have drawn therefrom.

**OBJECTIVES IN THE TREATMENT—**Three objectives in the treatment of the obese can be distinguished. The excess weight which has piled up must be removed, any coexisting abnormality should receive due consideration and should be treated along approved lines, and when the normal weight has been attained a plan of procedure must be outlined lest the condition reoccur.

**REDUCTION OF OVERWEIGHT THE MAIN OBJECTIVE—**The first objective in the treatment of the obese is to remove the overweight. It may seem a platitude, but the paramount object in the treatment of obesity is the reduction of weight. It must not be lost sight of that excess weight is the chief complaint of all but a few of the obese, and that the adiposity is the outstanding symptom whether it acts as a burden to carry, or imposes an embarrassment on myocardial function or becomes detrimental to the appearance, or provokes a fear of future complications. And so it follows that some means of reducing this surplus should be the main consideration in the therapy.

**NATURE OF SURPLUS—**It is generally conceded that the excess weight in the obese is fat with a small proportion of water. As far as known, excluding surgery, there is no way to get rid of body fat except by oxidation. And furthermore, excess fat, being a storage material, will not be oxidized unless there is a shortage of foodstuffs ingested. To reduce the overweight of the body there must be a discrepancy between the food intake and the needs of the body. The discrepancy can be brought about in two ways either the body needs can be raised or the food intake can be curtailed.

### METHODS OF RAISING THE METABOLIC RATE

Before considering the raising of the energy output, it is necessary to look over the metabolic rates of the obese. Investigators agree that it is rare to find a basal metabolism in these cases below the normal. Kenyon<sup>2</sup> found 8 out of 50 with a —15 or below. Her figures are somewhat higher than the majority of writers have given. Evans and Strang have pointed out that the basal metabolism of the obese really runs around +20 or +25. They show that as the extra weight is inert fat and does not enter into the active metabolism of the body, it should be disregarded when making the estimation. Computing from "ideal" weight, then, it becomes apparent that the obese live at a dangerously high metabolic rate. Therefore, it would not be justifiable to increase this high metabolic rate by exercise or stimulants, but instead methods for lowering it should be employed.

**MUSCULAR ACTIVITY—**The first method usually employed in raising the metabolic demands of the body is to increase muscular activity. It is possible for one doing light work and using about 2,300 calories a day to take on extra heavy work and raise his body needs to 4,500 calories. In other words, it is possible to double the body's daily needs by exercise. Thus, if continued for any length of time, with the original food intake, would be of definite value in reducing weight.

**HIGH PROTEIN DIETS.**—The protein of the diet has a high specific dynamic action. According to Rubner,<sup>3</sup> in a high protein diet the metabolism of the body may be raised 30 per cent above normal. The fats and the carbohydrates, on the other hand, under the same conditions, burn up only 12.7 and 5.8 per cent, respectively. The feeding of a high protein diet to the obese, therefore, might meet the requirements of the appetite but at the same time increases body metabolism 30 per cent. For instance, one on a 2,900 calorie diet of this type would burn up about 900 extra calories a day.

This might seem an ideal method of reducing but on close inspection one cannot but recognize limitations. First, there is a maximum amount of protein a human being can ingest. It is easily seen that an average individual eating 2,900 calories of food a day could not take it all in protein. Meat, for instance, having the highest content of protein of all our foods could scarcely be taken in amounts of over a pound and a half a day for any length of time. This amount contains much less than the required 2,900 calories. The protein content of this quantity of meat averages 180 gm. and its caloric value is 720. With the addition of other high protein foods it might be possible to raise the protein as high as 250 gm.

Since 250 gm. of protein is about the limit of human intake, it should give the highest value possible from the specific dynamic action. This amount, then, according to Rubner's figures would raise the metabolism enough to burn up 309 extra calories.

It must also be taken into consideration that in all protein foods there is considerable fat and sometimes carbohydrate, which are ordinarily inseparable from the protein. These bring the calories up but also in themselves have specific dynamic action.

The high protein diets as published in medical literature have run less than 175 gm. of protein. But they have all been, in truth, low calorie diets. This is shown by the first and most interesting obesity diet published, the Banting diet. This contains about 15 ounces of lean meat with additional proteins that bring the total up to 172 gm. The caloric value of the whole diet is 1,200, which is 1,700 calories less than the generally accepted normal intake. This difference alone could, if continued on with normal activities, cause

the loss of  $2\frac{3}{4}$  lb. a week. The 172 gm. of protein, on the other hand, according to Rubner would cost the body only 212 calories. So the total reduction of the diet would eliminate 1,700 calories while the specific dynamic action of the protein would account for only 212 calories. Notwithstanding that both factors were operating, Banting only lost 35 lb. in ten months. This was less than 1 lb. a week.

TABLE I.—COMPARISON OF SOME WELL-KNOWN OBESITY DIETS\*

	Carbo- hydrates, gm.	Protein, gm.	Fat, gm.	Total calories
Normal diet.....	400	100	100	2900
Epstein.....	50	100	85	1400
Banting.....	81	172	8	1100
Hirshfeld:				
Maximum....	122	134	46	1500
Minimum....	106	95	43	1220
Oertel:				
Maximum....	120	170	45	1608
Minimum....	75	156	25	1180
Robin.....	82	140	44	1200
Von Noorden....	112	155	28	1366
Evans and Strang	36	60	10	474

\* Adapted from Forchheimer

TABLE II

*Example of a high protein diet, consisting of the highest protein foods available, and being the extreme protein intake of a normal human being doing average physical exercise. The high fat content of such a diet should be noted*

	Carbo- hydrates, gm.	Protein, gm.	Fat, gm.	Total calories
Meat: 24 oz. 720 gm.	0	180	145	2025
Butter- milk: 32 oz. 1000 c.c.	48	30	5	320
Eggs: 2	0	12	12	156
Cheese, 3.3 oz. Amer: 100 gm.	0	26.4	33	409
Total	48	248.4	195	2910

It might be said, therefore, that the high protein diet gets most of its value from the fact that it is low in calories. And if one depends on the high protein without reduction of calories, it would be of value only to the mild or moderate type of obesity and of no practical value to extreme types that go to 300 lb.

**Thyroid Extract.**—Further, thyroid extract is a definite means of raising the metabolic rate. When the basal metabolism is below normal, thyroid extract should be used because of the hypothyroidism and there is no other known specific treatment. When it comes to the case of a patient with a normal, or, as has been shown in the obese, a high basal metabolism, conditions are different. In these cases the body is not short of thyroid. No justification exists for using this stimulant in a case



that registers a +25 metabolism. It would be like lashing a tired horse. As the great majority of cases have over a plus 15 metabolism the use of thyroid is limited to a small number of cases that actually show normal metabolic rates. Small doses given in these cases that do not show definite signs of hypothyroidism, simply give a tonic or euphoric effect. When large doses are given in the normal, definite results are achieved. Weight drops quite quickly for the first two weeks, but at about this time practically every patient develops thyrotoxic symptoms. Palpitation and general weakness appear and are only relieved by discontinuing the thyroid. Such symptoms are well known to every one who has tried to reduce weight by thyroid. It is also common experience that many patients actually gain weight while under thyroid exhibition.

Before a final estimate of the value of thyroid extract is made in any case, one thing must be taken into consideration. When patients are given thyroid they are put on a restricted diet. Whether they do or do not adhere to this diet will be of great importance. It has been the experience of the authors that those who did not pay attention to the diet either remained at the same weight or gained, while those that were exacting as to diet made definite losses. Thyroid extract may, in the opinion of the authors, be given credit, at times, for work done by dieting.

*Dinitrophenol.*—A new drug, dinitrophenol, has been proposed by Cutting<sup>4</sup> as a stimulator of metabolism. As this is known to be a definite poison to the system, it would appear to be dangerous for general use, at least until considerable animal experimentation shall have been carried out.

It is possible, then, to raise the metabolic rate of the body by a number of methods. Two of these methods, increased exercise and raising the protein, are physiological when kept within certain bounds. The other two methods are artificial and toxic under certain conditions. Any attempt at raising metabolism in the obese, however, is dangerous because these patients live really at a high metabolic rate.

#### LOWERING THE FOOD INTAKE

*Total Calories.*—In lowering the food intake there are some generally accepted principles which should be observed. The total calories can be brought down to a

certain minimum, below which known and measurable metabolic imbalances will occur. The lowest scientific minimum so far proposed is that of Evans and Strang who in 1931 showed that diets as low as 400 calories were safe.

*Individual Constituents.*—To lower the total calories, consideration must be given to the individual constituents of the diet. It is customary to start with the proteins. Below a certain number of grams of protein a day, the body will draw on its own protein and so dissolve essential body structure such as muscles and vital organs. This can be shown by the nitrogen excretion in the urine. The minimum figure is usually put at one gram of protein for each kilogram of ideal weight. For example, a subject 5 ft. 5 in. has an ideal weight of 135 lb. and requires 61 gm. of protein, even though his actual weight may be 300 lb.

The carbohydrate, the largest item of the normal diet and the first call for energy and heat, has a minimum for the daily intake. It is generally felt, at the present time, that the glycogen stores of the body must not be lowered beyond a certain amount, and considerable literature has been published in recent years stressing this point. Various authors have shown from clinical and experimental evidence that the glycogen in the liver and the muscles acts as an integral part of the body metabolism as much or even more than it does as a simple storage of excess carbohydrate. They have shown that the glycogen acts as a buffer or a first-line trench against toxins; that its presence guarantees sufficient glucose to preserve the correct ketogenic-antiketogenic ratio so that fats will not produce acidosis; and also that it functions as a protein sparer. The figure of 100 gm. of glucose has been mentioned by a number of writers as a minimum daily intake that will be safe for the average person. According to Evans and Strang, this figure can be safely lowered in the treatment of the obese. In their studies they found that the ketogenic-antiketogenic ratio was of little importance because of low fats in the diet, but that there was a definite minimum carbohydrate below which abnormal protein metabolism occurred. From long periods of observation they concluded that 0.6 gm. of carbohydrate per kilogram of ideal body weight was required to spare the protein.

To remove all the fats from the diet is a physical impossibility. Evans and Strang could not go below 9 gm. a day. This amount represented the inseparable fat of the protein in the diets.

The diet then, for a subject 5 ft. 5 in. in height and having an ideal weight of 135 lb. would be protein 61 gm., carbohydrate 36.6 gm. and fat 10 gm., making a total caloric value of 480.

If this diet is to be observed for a considerable period of time, care must be taken that adequate minerals and vitamins be ingested. The 5 per cent vegetables which are plentiful in the diet will probably cover the body needs for minerals, but a glass of skimmed milk once a day will allow a definite surplus. The vitamins in such a low diet fall below normal needs. This is especially so of the fat-soluble A. Haliver oil, one capsule three times a day, will supply this shortage. The vitamin B efficiency can be brought up by adding one yeast cake or two tablespoonfuls of wheat germ a day. The vitamin D can be taken care of by the use of ten drops of viosterol each day.

The food intake, then, can safely be reduced to 400 or 500 gm.; 1,200 or more grams below the basal rate of over 2,000 calories under the average daily intake. Assuming the fat in the body to have the same caloric value as exogenous fat, 4 calories per gram or about 4,300 calories per pound, one could expect, with other factors being equal, a loss of from 3 to 4 lb. a week under this regimen.

#### RÔLE OF WATER IN BODY WEIGHT

There is a certain amount of water in the body which can be removed comparatively easily. Part of this is free and part is in combination with the fat. This water content may be lowered by several methods. The first procedure is to restrict the intake to about 1,000 c.c. a day. This will lower the weight a number of pounds in a few days. Thereupon a balance will be effected and no more weight will be dropped. The use of salt-free or low salt diets releases more of the body fluid, but likewise a balance is struck after a few days and no more weight is lost.

Sweating, as practiced by fighters and jockeys for reducing weight removes, at times, as much as 7 or 8 lb. at one sitting. This is only a temporary loss as the weight is regained when the usual quantities of water are again taken. This practice also

has a bad effect of washing out the salts of the body. The use of salyrgan in the treatment of the obese has recently been reported. This likewise removes the water of the body without attacking the fat and is in the same class as sweating as far as the return is concerned.

Large amounts of water can be removed by cathartics which in addition sweep the food out of the intestinal tract before it is absorbed. Hence, noticeable weight reduction can be made by lowering the water content of the body but the amount is limited to a small proportion of the total excess weight and is quickly regained when normal amounts of water are ingested. The excess fat, the greatest factor in obesity, is not disturbed.

#### SECOND OBJECTIVE IN TREATMENT

The next objective in importance is treatment of any coexisting abnormality according to the usual procedures for such cases. Adjustments in the obesity treatment can be made to conform with the treatment for the complication. If there is a cardiac, a nephritic or some other lesion present treatment thereof must be instituted along approved lines. In the same category should be placed endocrine dysfunctions. Where there is a frank endocrine disturbance present, which is amenable to treatment, such treatment should be instituted. Patients with minus basal metabolism should have the rate brought up to normal with thyroid; one with a pituitary adenoma may need an operation, and one with an ovarian dysfunction should receive appropriate therapy. Results in the treatment of endocrine dysfunctions in this series of cases is irrelevant at this time except where such treatment caused a reduction of weight. The authors feel, as does Falta,<sup>5</sup> Kenyon,<sup>2</sup> and others, that glandular therapy itself has little or no effect in reducing the weight of even the frank endocrine cases.

#### THIRD OBJECTIVE IN TREATMENT

The third objective is to prevent, after normal weight has been reached, a return of the surplus. Such a return happens to be a very common occurrence. It is necessary, therefore, to estimate the amount of energy the individual ordinarily expends, and from the figure to calculate the daily food need. It is absolutely necessary to teach the patient the importance of the food intake in the regulation of weight and

to educate him to the point where he can estimate his own food

### CASE HISTORIES

The following three cases are selected from those that have been under complete control of the authors in the metabolic ward of the City Hospital in New York City for a considerable period of time. They are illustrative of the efficacy of the low calorie diet in any form of obesity.

**CASE 1**—Bella G., single 22 clerk, intelligent. Admitted to Metabolic Clinic, Midtown Hospital, July 15, 1930, referred from Medical Department as pituitary obesity. She had been under glandular treatment at another hospital for over a year.

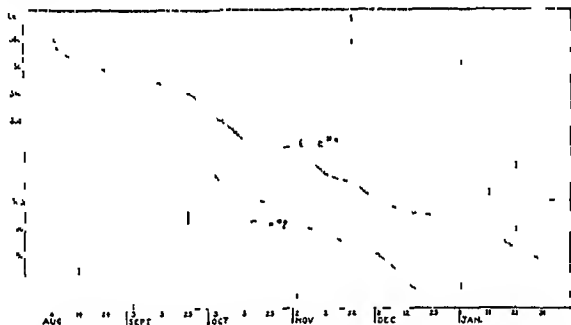


Chart I—Showing the steady loss of weight while on weighed low calorie diets. It also brings out the fact that the weekly losses are not identical even though the food and fluid intake and the energy expenditure is the same.

and gained weight steadily during that time. She had a number of attacks of thyroid poisoning and for that reason sought other care. Weight on admission 283 lb, height 5 ft 1 in, physical and endocrine examination negative. She was positive that she ate less than most people she knew and had no craving for sweets. On a 1600 calorie diet in the clinic she gained 2 lb in two weeks. Though given instruction in food values the weight stayed at 285 for several weeks. She did not report for six weeks and then telephoned she was 297 lb. This situation brought about admission to the ward at City Hospital (10-21-30). She claimed that at twelve the weight was normal. The tonsils had been taken out and following that she put on weight. At fourteen her weight was 188 lb.

The first week at the hospital was taken up with examinations, all of which were normal. On 800 calorie obesity diet with fluids restricted to 1,200 cc. and a salt poor diet she lost weight to 261 at time of discharge seven weeks later. No gland treatment was administered.

She was readmitted 9-23-31 weight 298 lb. Put back on previous regimen. She lost to 235 lb on 1-30-32, i.e., 63 lb in about four months. No acetone or diacetic acid at any time.

**Comment**—This is a case of extreme obesity. Such subjects are generally classified from clinical standards as hypopituitarism. However, it was not possible to confirm this by any known tests for pituitary disease. Her year's treatment at the previous clinic is typical of the great majority of the ambulatory obese seen by the authors. Endocrine treatment, largely thyroid is often given in connection with a reduction diet. No weight reduction occurs from any glandular product except thyroid. When this is given in doses of around 15 gr a day there may or may not be a loss of weight but there are frequently seen, before the end of the second week, troublesome thyrotoxic symptoms. These toxic symptoms usually occur before there is any rise in the basal metabolism.

She claimed a normal intake. This would seem to point strongly to a glandular imbalance, but

it was possible to prove the contrary. With weighed diets and good control her weight dropped at the same rate as those that admitted an excessive intake, in fact the full 3 lb a week expected of anyone on her proper diet.

She gained weight while taking thyroid in connection with a so called restricted diet. This is a very common occurrence. To the authors it means that the diet was not observed and controlled. It would seem that if the thyroid corrected the endocrine dysfunction, which it is supposed to do in these cases there would be no need of giving any consideration to the diet. He felt that those cases under thyroid treatment who adhere to their diets lose weight while the others gain. Hence the diet plays the most important role in this treatment.

**CASE 2**—Bessie S. Admitted to City Hospital 9-30-31. Discharged 12-22-31. Admission diagnosis: pituitary obesity.

Age 28. Married. One child. Height 61.25 in. Weight 313 lb.

Mother died of diabetes mellitus at 39. Menstrual history normal. Weight came on fast following appendectomy seven years ago. A mentally alert young woman with pituitary distribution of fat. Admits being a good eater.

B.M.R.: -6 and +9. 10-5-'31 fasting blood sugar 180 mg. 10-8-'31 sugar tolerance test 145-250-250-260-265-130. Put on 800 calorie diet, restricted fluids and low salt diet. Most of the days, however, she did not eat over 600 calories. Her weight drop is shown in Chart I.

On 11-30-'31 she showed acetone and diacetic acid. Had a sore throat and a temperature at that time. No urine showed sugar or was there any history of glycosuria.

*Comment.*—This woman gives a diabetic family history though she has never shown sugar in her urine. She has a definite diabetic tolerance curve. She lost the expected number of pounds for the total number of weeks, though some weeks she lost considerable while other weeks she showed no loss.

She is an example of the clinical observation, that obesity is often the forerunner of diabetes. It is interesting to note that even with her pre-diabetic condition the low calorie diet did not produce acidosis until an infection occurred.

CASE 3.—Mrs. B. H., 46, married. No issue. Admitted to City Hospital August 4, 1933. Height 5 ft. 5 in. Weight 363 lb. Most of family overweight. Father 6 ft. 4 in. Weighed 400 lb.

Up to one and a half years ago when her menopause occurred she weighed 250 lb. Gained thereafter almost 2 lb. a week. Treated at clinic for a short while with thyroid extract. Did not lose weight but developed severe thyrotoxic symptoms. Sought hospitalization thereupon.

Termed pituitary obesity by several medical consultants. Eye examination negative. X-ray showed calcification within sella turcica. Sugar tolerance curve 118-210-236-174. B.M.R. +15 and +12. Put on diet of carbohydrates 36.6 gm., proteins 61 gm., fat 10 gm., according to Strang and Evans. Fluids were restricted to 1,000 c.c. and a low salt diet given. The weight curve is shown in Chart I.

*Comment.*—Patient still on treatment January 30, 1934. Has no complaints. Never showed ketonuria and gives no signs of anemia. She likewise has a diabetic type of blood-sugar curve without a history of glycosuria.

#### SUMMARY

1. Weight reduction by low calorie diets is a very simple and positive procedure when there is complete control over reasonable periods.

2. Diets of 400 to 800 calories give on the average a loss of 3 lb. a week.

3. No difference was seen in the rate of loss in the cases clinically diagnosed as "endocrine."

4. Contrary to the well-entrenched common belief that most of the endocrine obese

eat no more or perhaps less than the average, it was found that the vast majority of the patients admitted a large intake. This was especially true in the cases of Fröhlich's syndrome.

5. There were a few, however, that vehemently and persistently claimed a low food intake. The authors had considerable opportunity to test this group and in every case, as in Case 1, it was found that these patients were in error and that they reduced at the same rate as the admittedly heavy eaters.

6. After the first week there were no complaints about the appetite, rather the patients asked for further reduction of food.

7. Most of the blood counts taken at the end of the treatment were well within normal. The *bête noir*, ketosis, was conspicuous by its absence.

8. Because so few instances of minus basal metabolism were found and because most of these patients had at some previous time used thyroid extract with bad results, practically no thyroid therapy was employed.

#### CONCLUSIONS

1. The authors are convinced that the low calorie diet as suggested by Strang and Evans is the most valuable method of reducing the weight in the obese that exists at present.

2. In both the endocrine and noneendocrine cases weight losses are in inverse ratio to the number of calories in the low diet.

3. Complete control is essential to success in reducing weight.

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#### FEWER AND BETTER NURSES NEEDED

There are too many nurses in the State in relation to the demand for them, too many poor nurses, too many nurses inadequately prepared for their work in the community, and too lax control of their practice. Fewer students of better quality, with more adequate clinical and theoretical preparation, fewer schools and these under educational

auspices, and control of those practicing nursing are needed. That is the finding of an intensive study of nursing education and practice in this State made by the State Education Department during the past two years in an attempt to determine how adequately present curricula prepare nurses for their work after graduation.

## WHEN SHOULD A SENILE CATARACT BE REMOVED?

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When a senile cataract should be removed is dependent upon many factors each of which must be considered in its relation to an individual patient. The simple rule of a few years ago, that the best time for operation was when the iris shadow had disappeared has, fortunately for the patient, been replaced by a rather complicated clinical and economical investigation, the results of which not only hasten his return to work but also minimize the operative risk.

It should be obvious that before a patient is subjected to this surgical procedure that his body health and ocular state should be thoroughly studied. It should in like manner be evident that before a diagnosis of operable cataract can be made, the examiner must be thoroughly familiar with the congenital and developmental changes which may be found in the lens.

Changes in the embryonal nucleus are usually circular and consist of very minute white spots placed near or in the center of the lens. They are easily seen with the slit-lamp but difficult to photograph. They remain stationary throughout life and do not influence vision.

The fetal nucleus corresponds in size to the lens at birth and on its anterior surface is an upright more or less clearly outlined Y and on its posterior an inverted X. A cataract involving this nucleus is usually greyish white, has a tendency to extend into the adjacent zone and may not be a complete ring or layer. On the periphery of this nucleus we frequently find opacities curving over the anterior and posterior surface of the outer rim. These hooks or riders vary in number, density, and visibility. Lamellar cataract seems to indicate that a state of malnutrition existed when the clouded lens fibers were formed. It is probable that the most common type of congenital cataract is zonular, the entire infantile nuclear layer is opaque. There is little difficulty in diagnosing this cataract by oblique illumination and ophthalmoscopic examination, but its minute construction can only be determined by means of the slitlamp.

The adult nucleus almost invariably shows some changes in surface contour like

knobs or depressions suggesting the segment formation of the lens. These rarely, if ever, reduce vision. The commonest cataract of the adult nucleus is in its lower nasal side and consists of irregular whitish gray opacities.

The thin but ever growing layer between the adult nucleus and the capsule is in the cortex. In discussions we should be very particular that when we refer to a cortical cataract, we mean only this portion of the lens. The first sign of a senile cataract is the widening of one or more spaces in the cortex. At first these are transparent water clefts. Soon, however, there is a distinct formation of globules in these fissures, followed by visible thickening of the outlining edges. The process may be rapid or slow, steadily progressing or intermittent or it may advance to a certain stage and then remain unaltered for years. Incidentally, it should never be forgotten that drugs have no influence on its growth and cannot either hasten or delay maturity.

Globules or vacuoles may appear in any part of the lens but they are most often found in the cortical layers. They may be single, round, oval, or kidney-shaped. They vary considerably in size from minute bubbles to large, lake like spaces. In fact, in one type of senile cataract almost the entire cortical layer in apposition to the capsule seems to be liquefied, suggesting in appearance a film of oil globules.

If we comprehend and follow the anatomical subdivisions, it will be possible to distinguish two definite, distinct types of senile cataract, the differentiation depending upon the amount of fluid imbibed and retained by the lens fibers and the spaces between them. In one there is liquefaction of all but the central portion of the lens which seems to correspond in size and shape to the fetal nucleus.

As the lens fibers swell and break down, the brown nucleus floats in the fluid. At or before the time of this nearly complete liquefaction the capsule becomes thickened, denser, and more resistant to operative manipulation.

The other type of senile cataract is characterized by the absorption of fluid which may be continuous or interrupted. The

lens becomes more and more opaque and definitely thinner so that if operation is long delayed, almost all of the lens fibers may be absorbed leaving an irregular folded lenticulocapsular membrane. We have observed the stages through which this type cataract passes and find that round and oval white spots may develop in the anterior cortical layer. These deposits may increase in size, show definite yellowish calcification or even the iridescent crystals of cholesterolin.

A patient who has any form of congenital cataract, may later have a typical so-called senile cataract. It is important that, if possible, we distinguish between the congenital lens changes and those which have come after the adult nucleus has been formed. The reason for this is that we have anterior subcapsular opacities as well as the more common posterior ones. Either may indicate an intra-ocular disease. For instance, in retinitis pigmentosa we may have a single globule in either the anterior or posterior cortical layer, but frequently as the disease progresses a rosette-shaped mass is formed. This must not be mistaken for the early signs of posterior cortical cataract which consists of a sheet of radiating opacities giving the impression of irregularly rounded, clear spots, which look like a sieve of various-sized meshes. These should not be confused with a traumatic cataract which is characterized by feathery extensions from the lens segment lines.

It is not the intent of this paper to discuss the condition of the conjunctiva or lacrimal apparatus.

After this preliminary review and summary of lens opacities, we should consider the individual eye. Is there iris atrophy? Does the pupil fail to dilate because of that or as the result of posterior synechiae? Is the anterior chamber of normal depth? What is the actual state of the lens capsule, is it tense or relaxed? Then we consider the patient's general health. Has he active foci of infection? If so, is the iris edematous? Has he diabetes? Has he syphilis? Has he retinitis pigmentosa? Has he hypertension or has he macular degeneration?

If he has hypertension, when should he be operated on, after a long period of rest, after the administration of tension reducers, or following a few hours of relaxation in the hospital in which the operation is to be done? This is debatable. Personally, I believe that the patient does best when his

cataract is removed shortly after his hospital entrance and without attempting to reduce his hyperpiesia.

When the patient has diabetes, should he have insulin? Should he be starved? Should his blood sugar be brought to the minimum or should he be operated upon as soon as there is a definitely established sugar tolerance? After reviewing our cases of cataract in the diabetic, we are inclined to believe that overinsulation has produced less satisfactory results.

It is probable that most of the readers will agree that when a patient has nonactive but Wassermann-positive syphilis, we should operate without waiting for a negative blood reaction.

In the presence of glaucoma, we should be exceedingly careful to exclude active uveitis before attempting cataract extraction. If the field of vision is extremely contracted and if the tension has persisted for a long time or if tension-reducing operations have failed, the removal of the cataract is attended with extra risk and with much less chance of a favorable result.

From the economic standpoint, the time to remove a senile cataract should to a great extent, other things being equal, be influenced by the ability of the patient to continue at his usual occupation. If the vision of one eye with or without correction is normal, or approximately so, it does not seem to me that we are justified in extracting the cataract. This opinion is given after many years of close observation of patients who have presented with one cataract. It is not an absolute rule, however, for some desire to have the lens taken out for cosmetic reasons. When a young person has a cataract it is often advisable to remove the lens before secondary disintegration takes place.

If the patient has bilateral, progressive, incomplete senile cataracts, and is unable to do his ordinary work, one of them should be extracted by the intracapsular method. I think all conservative surgeons agree that even if the patient has bilateral cataracts it is much safer to operate on only one eye rather than both at the same time.

If there is little ocular interference with work and if one cataract is much farther advanced than the other, the ideal time for operation as determined by slitlamp examination, seems to be when there is complete opacification and a thin but demonstrable collection of globules beneath the capsule; when the lens has returned to its normal

thickness, when the anterior chamber is of normal depth, and when the field of vision indicates sufficient function to warrant intervention. In the desiccated or dehydrated lens the preferable time is when the opacity is complete. Under these conditions the safest procedure can be performed with the least risk to the patient. It is in the determination of these optimal periods that the slitlamp examination proves its value.

To summarize, experience and diagnostic skill are necessary to determine the type and degree of maturity of any senile cataract.

When both eyes are involved and the patient is unable to work, other things being favorable, the intracapsular method is to be preferred. When one eye is affected and the other has good function, the ideal time for operation is when the lens is completely opaque and the anterior chamber of normal depth. When the cataract is caused by, or incident to, constitutional disease, careful consideration must be given to such complicating factors and, finally, the diagnosis of senile cataract is made most accurately after slitlamp examination.

344 STATE STREET

## WHAT PROGRESS HAS BEEN MADE IN PERFECTING THE CATARACT OPERATION?

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It is fitting and always of value in the development of surgical methods, to stop and look about us at times and to take stock, as it were, of the ever changing techniques and methods in the perfection of operative procedures. In recent years, these changes have been so marked and of such inestimable value in perfecting the operation for cataract, that the writer is led to present what progress has been made.

### ASEPSIS

From the viewpoint of asepsis, the preoperative measures as well as those at the time of operation must be recognized. Of the many methods employed, the writer believes a solution of argyrol, or mercuriochrome or zinc sulphate, three times a day for three or four days prior to operation has been the usual procedure. Silver nitrate, 1 per cent, one or two hours before operation, has been strongly advocated and no doubt has its value. Of these methods the writer's preference is that of zinc sulphate solution,  $\frac{1}{2}$  per cent, three times a day for three or four days prior to operation. Irrigation of the lacrimal sac with zinc solution on the day before operation is always good practice. A laboratory report of a smear from the conjunctival cul de sac on the day of operation has long been regarded as a valuable indication of the bacterial content.

At the time of operation, it is now believed to be advisable to paint the brow and forehead and lids with tincture of iodine.

3 per cent, and neutralize with alcohol, 60 per cent. The cilia and lid margins are also treated in the same manner and the cilia of the upper lid are excised. This toilet of the parts requires a little time, if properly carried out, but without any doubt whatever, it is an essential part of good practice to day. As to the other commonly employed methods of irrigation, etc., suffice it to say that since the autoclave has entered our operating rooms—and these local measures have been carried out—the percentage of infections has diminished to the point that now one is very rarely encountered. The author has seen 2 cases in twenty four years of practice and these were observed about nineteen years ago.

### PHYSICAL CONDITION OF PATIENT

Even before the discovery of local anesthesia it was recognized that the physical condition of the patient was an important factor which determined the success of the operation for cataract. Pathologic studies, both systemic and ocular, have taught us the causal relation thereto, and especially those related to arteriosclerosis, toxic conditions, foci of infection, etc. These things, being true, it has come to be the part of good practice to eliminate, or at least to understand in some detail, the systemic condition of the patient prior to operation. It is hardly necessary to emphasize the importance of diabetes, hypertension, nephritis, decayed teeth, tonsillar infection, etc., as being often responsible for complications.

which could have been avoided by corrective measures previous to operation. It appears to be accepted universally that the cataract operation has been perfected in recent years by the more rigid investigation of the patient's physical condition.

#### ANESTHESIA

The introduction of butyn as a local anesthetic which does not dilate the pupil, and the advent of subconjunctival injection of 2 per cent cocaine solution have been recognized as definitely progressive measures in perfecting the cataract operation. Dilatation of the pupil in cases where the anterior chamber is normal or shallow, diminishes the depth of the iris angle and therefore mechanically prevents in many cases the correct introduction of the knife, and especially at the counter-puncture. The use of butyn, instead of cocaine or holocaine, will permit the next stage of anesthesia, subconjunctival injection of cocaine, 2 per cent, without pain, and thus complete anesthesia is secured in the course of four or five minutes. The section is made as the pupillary response to cocaine injection is noted. This simple method of producing complete anesthesia without mydriasis and without exciting the patient nervously at this critical time is undoubtedly a progressive step in perfecting the cataract operation.

Retrobulbar injection of novocaine or procaine has been advocated by many excellent authorities, and although undoubtedly most satisfactory in their hands, it seems entirely unnecessary compared to the simple method of subconjunctival injection.

In very unusual cases, where general anesthesia has been indicated, the use of avertin has been widely heralded during the past few years as being a progressive method. This no doubt is true, but it must be administered by an expert, and it must be understood that it greatly reduces the ocular tension at the time of operation. Its field is undoubtedly a positive one and, when more experience is gained by its use in ophthalmology, it may displace ether and chloroform, which are now very rarely indicated. Because of the effect of avertin in markedly reducing the intra-ocular tension, cases of cataract with hypertension are regarded as the most suitable for the use of it. To employ avertin because of the nervous state of the patient seems unnecessary, because in these cases an injection of hyoscine, morphine, and cactine—*tabellae*

No. 1 or No. 2, (No. 1 containing  $\frac{1}{4}$  gr. of morphine, or No. 2 containing  $\frac{1}{8}$  gr. of morphine) made by the Abbott Laboratories—fifteen minutes before the patient is brought to the operating room, relieves the nervous element which may be present and rarely produces any postoperative nausea. Luminal,  $1\frac{1}{2}$  gr., previous to operation is also a very valuable measure for the same purpose and has been employed by the most conservative ophthalmic surgeons.

#### CONTROL

The factor of control of the patient has for many years been entirely a personal one. It has implied in many instances training of the patient by the surgeon previous to operation. This was often due to lack of confidence on the part of the patient, or more commonly a form of sheer ignorance or perhaps fear of pain or of an unsuccessful result.

But now, that is, in the past few years, while we still desire the confidence of the patient and must insist upon some personal control, the local control of the lids has been solved by the simple method of novocaine injection, blocking the orbicular branches of the facial nerve. Three per cent novocaine solution injected along the temporal rim of the orbit, and 1 c.c. of the same solution at the nasal portion of the upper lid, and also at the nasal portion of the lower lid renders the patient incapable of forcefully squeezing the lids. Although a very simple method, it is known to be absolutely trustworthy, if the novocaine is so, and if correctly injected. Blocking of the facial branches of the nerve by preauricular injection of novocaine is another method of performing the same service, and is employed by many of our best surgeons, but again the simplicity of the former method commends itself more favorably to the profession.

Retrobulbar injection of procaine hydrochloride combined with epinephrine, after Elschnig's technic, for the purpose of anesthesia, also tends to immobilize the globe—a type of akinesia which is believed to be a great advantage, and especially because the intraocular pressure is reduced by this injection. Thread fixation, after Angelucci's method of application, is another measure advocated for local control of the globe, and is enthusiastically recommended by de Grosz who uses it in every case.



Fixation of the globe with suitable fixation forceps, which have a deep biting grasp, seems to be exceptionally satisfactory for this purpose, when the lower third of the internal rectus is grasped. This fixation not only controls the downward rotation of the globe, but "steadies" it and offers most effective resistance to penetration of the knife both at the puncture and at the counterpuncture, which aids in permitting a smoothly made section by two sweeps of the blade.

When one recalls the hazards of cataract extraction twenty years ago in cases almost spastic with fear, timid and ignorant, and frequently of alien blood, unable to be understood or to understand directions—all this and without the methods of anesthesia and control of the lids and globe now employed—one must realize the magnificent developments which have taken place in the past few years in perfecting the operation of cataract extraction.

#### CONJUNCTIVAL FLAP AND SUTURES

The technic of operation by making a square-shaped conjunctival flap, when the corneal section is made, and at once placing two French silk (No. 000) sutures at advantageous points in the flap is undoubtedly one of the most valuable steps in the progress of perfecting the cataract operation. This, the author believes, must be universally accepted in the course of time. Many authorities regard it as unnecessary, cumbersome, and an added manipulation and irritation attending the operation. On the contrary, it is the writer's conviction, that it is not irritating or cumbersome when properly carried out, and furthermore, it has many exceptional advantages. The conjunctival flap is an aseptic measure, and aids in the nourishment of the corneal section; it is a protective measure during and after operation, and undoubtedly affects the degree of postoperative astigmatism.

The sutures, when placed each just above the pillars of the coloboma, and carried at an angle (not more than 15 to 20 degrees) on either side through the bulbar conjunctiva, produce a bit of traction on the flap upward and laterally, so that the lips of the corneal wound are sealed tightly in place when the sutures are tied. This is recognized and its value appreciated, when the spatula is used to replace the pillars of the coloboma. These two sutures are not cumbersome or obstructive in the precision of

technic. They are so placed after being inserted, that they are not in the line or direction of the cataract, when being extracted. After extraction of the lens is completed, each is tied almost to the conjunctival flap as a means of protection, and when the operation is finished they are tightly tied. Their presence after operation is unknown to the patient, no noticeable irritation is observed, and by the seventh day they are usually found on the dressing or free in the cul-de-sac. The removal of them, when necessary, is of no consequence. It must be understood, however, that the character of the silk suture must be French silk No. 000, and no substitute for this yet employed by the writer is comparable.

The safe-guard that is felt after operation, when a suitable conjunctival flap is firmly sutured in position, is well worth the time and precision of making it a part of the essential technic of the operation. The conjunctival flap and sutures are not advocated because of anticipation of vitreous loss, although they are protective measures in this respect, but more especially is it essential because of the fact that undoubtedly it permits a more perfect replacement of the iris pillars and restoration of the anterior chamber in twenty-four hours. Since using this technic, the writer has not seen a case of hypertension after cataract extraction. The advantages of this technic are at once suggested by the mere description of it, but they multiply in number when one has employed it over a brief period of time.

It is well known that the character of the section made in cataract extraction is one of the most important steps in the technic, especially as to the size, location, and smoothness of the incision. The precision of this procedure is somewhat dependent upon the judgment of the operator as to the pathology of the cataract to be removed, which will, of course, determine the size of the section in the particular case. The conjunctival flap and sutures do not obstruct extraction of the cataract, as often occurs in extraction by the method of making a conjunctival bridge. In these cases the corneal flap is not held tightly in position, as occurs when suitable sutures are placed.

#### CHOICE OF OPERATION

The progress made in recent years as to the pathology of the cataractous eye—especially as to the character of the lens,

its size, consistency, the capsule, and its zonular relationship, etc.—has made it clear how, in varying degrees, these may differ. For this reason, the judgment of the operator is challenged as to the choice of the operative procedure to be employed in the particular case. The question arises as to the choice of a corneal section or a conjunctival flap, the choice of a combined extraction or after preliminary iridectomy or a simple extraction, the choice of extracapsular or intracapsular extraction. It seems to be conservatively accepted that one method of extraction is not suitable for all cases, and especially when the purpose of the operator is to give this patient before him the safest procedure that will yield normal vision and a healthy eyeball. It is agreed that a number of different methods skillfully carried out in the same case may yield normal vision, but the hazards of one method over that suitable for the particular case must be recognized and the welfare of the patient seriously considered.

Here, perhaps, in the choice of operation for a given case, lies the most delicate question before us, because one's prejudice should not overrule the actual pathology and mechanical status of the case. For example, to attempt to make a large section and tumble the lens in intracapsular extraction in a case with very shallow anterior chamber and a swollen fairly soft lens, does not seem to ring true to the conservative judgment required. In such a case it is the writer's view, that a narrow cataract blade should be used, that the section should be smaller than is usually required, that the anterior capsule may be removed with Schweiger capsule forceps or a suitable cystitome incision made, and the lens removed in the usual manner of twenty-five years ago.

On the other hand, in certain types of so-called "green cataract," with nuclear sclerosis, or in hypermature cataract, or in the "pepper and salt" type, or in those found in retinitis pigmentosa, in which cases the anterior chamber is deep and the capsular attachment permits, a large section may be made and the lens removed by combined extracapsular extraction or by the intracapsular method as the case may require.

The factors which should govern one's judgment in the choice of operation for the given case are: (1) the age of the patient; (2) the character of the cataract—immature,

hypermature, nuclear sclerosis, complete sclerosis, complicated cataract, "pepper and salt" type, etc.; (3) the character of the capsule—tightly drawn, fibrous, or green capsule; (4) the depth of the anterior chamber; and (5) the temperament of the patient. It is unnecessary here to discuss these factors in any detail before this enlightened Society of ophthalmologists, but it is fitting to call attention to the fact that the choice of operation, dependent upon these factors, has been a most progressive step in perfecting the modern extraction of the cataract, and is undoubtedly one of the reasons for the large percentage of perfect results enjoyed by the public and by the profession at this time.

#### INSTRUMENTS

Modern instruments of precision for the cataract extraction are certainly recognized as a progressive step in perfecting the technic of the procedure. Of these the writer believes the speculum of Webster Fox, and that of William Lister, and the lid retractors of Lang and Fisher deserve special mention. The fixation forceps with a long, deep grasp (patterned after Lang's) for the purpose of engaging the lower border of the internal rectus is an instrument devised recently which fixes the globe so rigidly that the section can be controlled with great delicacy.

Two types of cataract knife are now made by Weiss, London, one  $1\frac{1}{2}$  mm., the other  $2\frac{1}{2}$  mm. broad, with a straight cutting edge, directly lance-like to the point, and without any change in the width to form a belly along the cutting edge. The narrow blade is used where the anterior chamber is shallow, the broad blade is used where the anterior chamber is normally deep. The mechanics of the procedure in making the section explains at once the value of these knives, since the iris is little exposed to trauma, and the counterpuncture can be made with precision. A cataract knife with a curved cutting edge, or belly, is obviously unsuitable for making a cataract section.

The capsule forceps of Schweiger for removing the anterior capsule of the lens, and those of Elschnig for removal of the lens in capsule are delicate expressions of the art of instrument-making, which deserves deep appreciation of their great value in perfecting the technic of this operation.

Many other instruments might be mentioned here, which aid in certain cases to perfect the technic, such as the delicate malleable repositor, the small spoon, the expression hook of A. Wilson, the mouth suction apparatus (Teale), the automatic electric suction machine (erisphake of Barraquer), etc. Suffice it to say that our instruments of to day have greatly improved the technic and lessened the hazards formerly experienced in the extraction of cataract.

#### POSTOPERATIVE CARE

After an experience of twenty-four years the writer is convinced that the post operative care of cataract cases is almost universally underestimated as to its value in avoiding immediate complications and in the preservation of the normal cataractous eye. This so called aftercare, begins at the time of operation, because every cataract extraction should be performed in the bed in which the patient remains after operation. That the most critical time after operation is that immediately following it for forty eight hours, is certainly appreciated by all authorities on this subject. There can be, therefore, no excuse for moving a patient from an operating table to a rolling stretcher, thence to the elevator, from the elevator to his bedroom and again lifting him from the stretcher into his bed. The mere description of the procedure speaks for itself, and especially so when we know that in an extraction made with conjunctival flap and suitably placed sutures, the anterior chamber begins to reform by the time the bandage and mask are properly placed.

The value of competent nursing service for the first forty eight hours, day and night, has come to be a recognized post operative necessity. Of course, this service for at least four or five days is especially desirable and should be secured whenever possible to do so.

The postoperative treatment of these cases is well known and is generally agreed upon. But in particular may be mentioned the use of an atropine solution of 3 per cent, which the writer believes is unnecessary and often precludes secondary glau-

coma. Atropine solution of 1 per cent is of sufficient strength to avoid iritis and does not produce excessive dilatation of the peripheral iris fibers.

Many minor details employed in the postoperative care of these cases might be mentioned here, but with little advantage to those who have their own methods of avoiding the dangers which may threaten the patient so personally helpless following this operation. Suffice it to say that the ounces of prevention, which have been learned in the care of these cases, have been definite measures of progress in perfecting the cataract extraction.

#### CONCLUSIONS

Given a healthy uncomplicated cataractous eye, it is believed reasonable to assume at this time that with the progress, herein outlined, which has been made in recent years in perfecting the cataract operation, the patient and the oculist have every reason to anticipate the most satisfactory result—a healthy aphakic globe with normal vision.

The special measures herein outlined may be enumerated as follows:

- 1 Aseptic measure before and during operation
- 2 The physical wellbeing of the patient
- 3 Anesthesia locally complete and simply applied: butyn and subconjunctival cocaine solution
- 4 Control of the patient, and local akinesia of the lids and globe
- 5 Section with conjunctival flap. Two sutures advantageously placed
- 6 Choice of operative procedure in each case
- 7 Modern instruments of precision
- 8 Postoperative care is emphasized

It may seem somewhat presumptuous here to use the term "perfecting the cataract operation," but this is chosen as an ideal toward which we strive, and, as the writer has pointed out, includes the knowledge of the pathology present and the judgment of the surgeon who performs the operation. May the progress in perfecting this operation continue with the years.

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#### DISCUSSIONS OF DR. BEDELL'S AND DR. KEY'S PAPERS

DR. ALBERT C. SNELL. In my opinion the answer to the question "When should a senile cataract be removed?" may be based almost entirely on three fundamental considerations

provided of course, that the cataract is an operable one which generally means that there is evidence of no serious inoperable impairment of vision, no active source of infection in conjunc-

tiva or lachrymal duct, and no active or acute inflammation in the eye, especially in its anterior segment. The three essentials to be considered are: First, the condition of general health of the patient; second, his economic status; third, his social status. In considering general health we must decide whether there is a contra-indication to operation because of the age of the patient, the degree of senility or feebleness, and a probable short life expectancy. We would all admit that there is no suitable time to operate on an aged person in feeble health when even the confinement in the hospital and in bed for a few days would greatly jeopardize such a patient's life; neither would we operate when the span of life is reasonably sure to be of short duration. When no such serious obstacle is presented, the time selected for operation also depends on the probable effect the condition of general health may have on the outcome of the operation itself. I have reference especially to the influence of focal infection, kidney lesions, diabetes, and hypertension. In my judgment these conditions so far as they can be improved within a reasonable period of treatment should be corrected before undertaking a cataract extraction. Yet none of them are absolutely a contra-indication to the operation, even if they do not yield to treatment.

The second, the economic status, has a very important bearing on the proper time to operate. If a patient is dependent on his eyesight for a livelihood and for the support of his family, an early operation is indicated and should be undertaken before vision is reduced to such a point that the patient may lose his job or be unable to earn a living. The kind of cataract or the condition of its maturity is no deterrent in considering this factor under modern technique of intracapsular extraction.

The third consideration, the social status, takes note of the individual's position in life, his desires and social obligations. It relates largely to the individual's happiness and contentment or otherwise, with his condition of imperfect vision. For example, some patients have retired, and even if they are not able to read ordinary print with any aid, are very happy and contented with their lot. Such patients at times have a great dread of the operation and under such circumstances I would not urge an immediate operation. However, such patients, especially those with the probability of many years ahead, may be informed that with advancing years the operation may present greater difficulties because of hypermaturity or because of later feebleness or of ill health.

Dr. Key has described in detail the perfecting of the cataract operation during recent years. By employing these refinements the hazards of cataract operation have been greatly decreased and the intracapsular operation has become relatively the safer operation. Still, the choice of operative technic depends to a very large degree upon the skill which the individual operator has developed, using his individual technic. A successful method should not be changed hastily. Personally, I much prefer the intracapsular operation in all possible cases. We feel very sure that this operation is not more hazardous than the operation done with capsulotomy, provided that the operator has acquired some skill with the technic. Under modern technic the cases in which vitreous is presented or lost are even less than under the old form of operation and post

operative complications are rarely seen with the successful intracapsular operation. Any operator can become skillful with this method if he will carry out most carefully the technic as described. At first select the more favorable cases and be sure to have a good assistant. The intracapsular operation is the operation par excellence.

Dr. ERNEST F. KRUG: More than ever an exhaustive examination prior to operation and a thorough understanding of all the factors which have led up to the formation of the cataract and the exact state of the eye, its spacial relations, the type of cataract, etc., is necessary for the proper selection of the cases suitable for operation. I wish to draw particular attention to a careful study of the state of the pupil and its reaction if disturbed, to determine whether the abnormality is due to a diseased eyeball or to the mechanical interference of a swollen lens. Importance is placed on the facts of not only determining the projection but also the acuity of central vision to forestall the disappointment of a poor result after a good operation, due to senile macular changes, with central scotoma. I shall confine my remarks to such complications as arise as a result of the surgical interference itself.

As for the preparation for operation: There is no excuse to my mind, for an infection at the time of operation. A negative smear should not require much treatment of the conjunctival sac. The routine cleansing of the lachrymal sac is a good procedure. Twenty per cent argyrol instilled several times prior to operation and irrigation of the sac should be sufficient. The patient should not be in the hospital too long before the operation. We try to have the patient in the hospital for forty-eight hours for the necessary examinations and laboratory reports.

As for medication: Lumlinal in dosage according to the nervous condition of the patient and never morphine or its derivatives, has proven satisfactory and no medication per mouth after the operation. For the usual complaint of backache and restlessness, a suppository of  $\frac{1}{2}$  gr. codeine, 10 grs. of aspirin, which can be repeated every four hours, has been most satisfactory.

We must all admit that a surgical procedure with the least possible trauma to the eye—and that means the minimum of instrumentation and steps in the operation—must give the best result. The operation should be simplified, not complicated, by unnecessary steps. The ideal operation would be, a section, a dislocation of the lens from its suspensory ligament, and its delivery from the eye with the least possible pressure upon the globe.

No one will dispute the superiority of a safe intracapsular extraction followed by none of the dangers of retained lens substance and capsule, and the formation of the troublesome secondary cataract.

The Kalt forceps, although it is not perfection, we have found to be the safest and most dependable of all the forceps at our disposal.

Dr. Key has told us of the new methods of anesthesia; a real step forward toward minimizing the risks of the operation. One should be exceedingly careful not to strike a blood vessel in the injection. If this happens, it can be most annoying.

After 25 years of cataract surgery, I am still convinced that the traumatism at the time of operation is the cause of all complications with

few exceptions. We can no longer place the blame of a poor operation upon the behavior of the patient. This applies now as an exception rather than a rule.

To me, the section still remains the most important step of the operation. I am careful to note that the spring of the speculum used is weak, and its insertion should be accomplished without touching the skin of the lids. This means that it should be closed when placed under the lids, then opened slowly to the necessary width when it has been inserted below the lids and only when the control of the orbicularis is assured. The fixation of the eyeball must be firm. The fixation of the tendon and the internal rectus just below the horizontal meridian has given me the firmest hold. The use of a fixation forceps without a catch has been advised because one is able to let go the hold upon the eye at once in case of accident. For me, the fixation forceps with a catch has assured the fixation and has cured me of the habit of exerting pressure upon the globe by too firm a grasp as was true before I used a forceps with a catch. One can remove such a forceps quite as quickly when it is in good working order in case of need.

The incision should be a deliberate and steady sweep of the knife without haste. Only then will the section be clean cut and it should never be less than  $\frac{3}{4}$  of the corneal circumference. For the extraction in the capsule, it is necessary to enlarge this section to 180 degrees to allow the lens to escape. The section should never encroach upon the sclera. A conjunctival flap is desirable and can be attained with the section in the limbus. I do not believe in too large a flap. It can become very troublesome from bleeding and it can be disturbing to the nutrition of the cornea in the healing. Through the entire procedure there should be no pressure upon the eyeball and we know that it is not only the pressure of the lids but the pressure of the recti muscles, especially the traction of the superior rectus, which in a restless patient may bring about an early escape of aqueous and result in obliteration of the chamber with the danger of the presentation of the iris before the knife, and to avoid this, an injection of novocaine over the superior rectus is advised as a routine procedure.

As soon as the section is complete, the fixation forceps should be released and the speculum removed. With a proper akinesis, it is not necessary ever to touch the lower lid and if there is a drooping of the upper lid this can be easily controlled with a lid hook.

The question of iridectomy. I can see no objection to an iridectomy. It opens the pupil, which is never as large as the lens and minimizes the force necessary to expel the lens. It opens the pupil only if the iridectomy is complete. We perform preliminary iridectomy on all patients with a shallow anterior chamber. It is always followed by a deepening of the chamber, assuring a better section at the time of extraction, and this brings me to the importance of knowing the tension of the eye.

One of the most unpleasant complications of the cataract extraction is glaucoma. If we carefully study the tension of our cases prior to operation we will find that not a small number of them are on the borderline of tension and in just these cases is a preliminary iridectomy indicated. In a cataractous eye, there is a change in the intraocu-

lar fluids and especially during the stage of swelling of the lens, a preliminary iridectomy can do no harm and usually brings about more normal spacial relations in the eye. We all try to remove the lens in the capsule. I for one cannot state in advance whether or not I shall be able to accomplish this in any one case.

When we are dealing with a cataractous lens we have either a soft or a hard cataract. By soft cataract we mean a lens with a comparatively small nucleus and more degenerating cortex which is either soft and fluffy or sticky, or actually fluid, as in the hypermature morgagnian cataract. The capsule of the lens is usually thin and easily torn. In the hard cataract we have a large, hard, sclerosed nucleus with very little cortex, a tough capsule, sometimes difficult to grasp and even to cut with a cystotome. The older the patient the weaker the attachment of the zonule to the capsule and the less difficulty we encounter in our attempt to dislocate the lens, but the attachment of the suspensory ligament to the capsule is relatively weaker in the soft cataract than in the hard.

We are indebted to Dr. Arnold Knapp for having shown us a safe and conservative method of removing the lens from the eye in its capsule and if the attempt is made, the lens is grasped below with a Kalt forceps and gently rocked from side to side with gentle traction. If it is a lens that will dislocate, it will do so almost at once. The procedure practiced by some operators to hold fast to the lens and withdraw it with the forceps from the eye, is not without danger of loss of vitreous. The tumbling of the lens as taught us by Dr. Knapp can be done without fear of accident and if one does not succeed in dislocating the lens the capsule forceps will tear off a large piece of the anterior capsule and the extraction can be completed in the usual way.

If the lens dislocates, the tumbling of the lens and its extraction from the eye should be accomplished with as little compression of the vitreous, choroid, and retina as possible. If the lens does not tumble, it will deliver in the upright position the upper edge foremost, presenting in the wound upon slight pressure below.

One of the most unpleasant complications in this operation is the loss of vitreous, immediately after the section, before the lens has been removed. I know that most operators proceed and remove the lens with a loupe. I have done this but it has always been accompanied by more loss of vitreous and an unsatisfactory result. It is a subject which I think we should discuss. Shall we deliver the lens with the loupe, or shall we stop and remove the lens at a later time? Gifford is strongly in favor of this.

We use a few drops of 1 per cent atropine before the operation and none after unless there is definite iritis. I prefer hyoscine if there is any evidence of iris irritation and I find it quite satisfactory especially in those eyes that, prior to operation are at the borderline of tension.

We should try to perfect ourselves in the extraction of the lens in the capsule. It gives us a clear pupil, no debris of soft lens and capsule to cause secondary glaucoma and the development of a secondary membrane necessitating a decision with its disturbance to the vitreous. I consider the decision operation fraught with greater danger than the extraction itself. With this clear

pupil we have the best visual results and if the operation is carried out deftly, there is less inflammation with less danger of inflammatory reaction, and a shorter period of convalescence and a more satisfied patient.

I want to emphasize Dr. Bedell's remarks against the promise of cures of cataract without operation. There is no way of stopping a cataract from maturing and those types of cataract which do not mature are not influenced by any medication and will not mature if they are left alone.

We no longer wait for the cataract to become mature in cases where the nuclear clouding so reduces the patient's vision that he can no longer carry on his occupation. With a nuclear type of cataract this comes on rather quickly. One should remove the cataract as soon as the ability to read is interfered with, and that means inability to carry on almost all usual activities. A patient's occupation also determines whether a unilateral cataract should be removed. A chauffeur, for instance, would be greatly benefited even if he could not wear a cataract glass, in that he could at least discern objects with the operated eye.

Let us not forget that a senile cataract is found in a senile eye, and the entire eye has undergone a change and even with a perfect operation, perfection cannot be expected in every case.

DR. JAMES W. SMITH: The lesson to be drawn from these excellent papers is that every cataract patient should have a careful preoperative examination, not only of the eye but the mind and body as well. I would like to ask Dr. Bedell

what his preoperative attitude is in cases of fixed diabetes with high blood sugar. Some authors attach very little importance to the presence of diabetes and I believe Dr. Vail of Cincinnati in a recent paper stated that the postoperative course was uncomplicated in a series of diabetic cataracts. Dr. Key stated that he gave his patients  $1\frac{1}{2}$  gr. of luminal before operation. I have not found this satisfactory and have seen patients act as frisky as school children who have had as high as 3 gr. of luminal and even morphine preceding operation. I prefer to start the administration of phenobarbital about 8 hours before operation. I believe Dr. Snell's suggestion of beginning the administration of this drug the night before to be even better. Under the heading of anesthesia, Dr. Key mentioned O'Brien's modification of the Van Lint nerve block of the seventh cranial nerve fibers supplying the orbicularis oculi. I have in mind a patient who following this procedure presented the lip of the corneal wound between the lids at the first dressing postoperatively. Some operators dress their operative cases after 24 hours. I have always been at a loss to understand this procedure and why some surgeons to satisfy their curiosity are willing to replace a sterile dressing applied in an operating room under the most aseptic precautions for one in the ward of questionable sterility. It would be interesting if someone would present a paper emphasizing when a cataract should not be operated on and also stressing the accidents that have been known to follow cataract surgery.

## NEW YORK CITY TO TRY GROUP HOSPITALIZATION

The State Department of Social Welfare has approved an application for the establishment of a nonprofit corporation to organize and administer a group hospitalization plan among the voluntary hospitals of New York and its suburbs. The establishment of the corporation, to be known as Associated Hospital Service of New York, now depends on the obtaining of funds to put the plan into operation and maintain it for six months; the payments of beneficiaries will provide the hospital benefits after that time. Governor Lehman recently approved a bill amending the state insurance law to permit development of this plan, which is sponsored by the United Hospital Fund, comprising forty-six voluntary hospitals. It is anticipated that about 100 hospitals participate, according to the *Journal of the A. M. A.* The proposed association would be controlled by eleven directors elected annually by a voting membership comprising the presidents of the Hospital Conference of the City of New York, the Brook-

lyn Hospital Council, the five county medical societies of New York, and the trustees of the United Hospital Fund. The individual cost would be \$10 a year and the service would be available only to the insured person, not to his dependents, though dependents may be included later, it is said. The subscriber would be entitled to three weeks of semiprivate hospital care after a ten-day waiting period immediately following the signing of the contract (this waiting period would not apply in cases of accident) and ten months in obstetrical cases. The subscription does not include fees for medical service. Admission to the hospital would be granted only on the recommendation of the subscriber's physician. The new legislation and the development of the group payment plan are the result of a study made by a special committee of the United Hospital Fund, of which Doctor Sigismund S. Goldwater, now city commissioner of hospitals, was chairman.

## HOW TO SIZE UP STATE MEDICINE

We can judge what state medicine would be like in this country by looking at the sad conditions often prevailing under our compensation laws. Dr. Nathan B. Van Etten states in an informing article on health insurance in the *Literary Digest* that in forty-four states, compulsory compensation insurance laws involve similar expensive administrative machinery, which rarely is satisfactory and largely riddled with scandalous racketeering.

In small towns the schemes are sometimes meritoriously operated, but in every city in the country they are dominated by malignant influences.

Compulsory health insurance to replace contract practice might be a step forward, he observes, but in the United States, where most of the physicians are "on their own," compulsory health insurance would be a backward step from independent service, however poorly paid, to dead levels of governmental servitude.

## THE PROBLEM OF THE PREMATURE INFANT

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INTRODUCTION—The problem of the premature infant has been receiving attention by various groups of medical men for many years, but very little has been accomplished in reducing the mortality in this group of patients until very recently. Reports from various State agencies show that prematurity is the cause of death in approximately 25 per cent of all infants who die under one year of age. In Table I are given the infant deaths occurring during 1931 and 1932 in Pennsylvania, according to the records of the Bureau of Vital Statistics. This shows that prematurity was the cause of 24.3 per cent of the deaths in 1931 and 26.6 per cent in 1932. According to their records, there has been no decrease in this premature death rate in the past 28 years.

TABLE I—INFANT DEATHS UNDER ONE YEAR OF AGE IN PENNSYLVANIA

	No of cases 1931	Per cent 1931	No of cases 1932	Per cent 1932
Total deaths	11 879		10 103	
Prematures	2 886	24.3	2 697	26.6
Disease of early infancy	1 387	11.6	2 896	28.7
Pneumonia	2 185	18.3	1 676	16.5
Enteritis	1 460	12.2	1 034	10.2
Malformations	1 378	11.6	1 152	11.4
	9 296	78.0	9 405	93.4

The same can be said also of malformations and other diseases of early infancy, while substantial reductions have been made in the death rates of pneumonia, gastro intestinal and other diseases occurring in the first year of life during this same period. It is because of this high mortality that our interest in the problem of the premature has been stimulated.

According to the records presented in this paper, prematurity was the cause of 68 per cent of the total deaths occurring during a 27 month period at the Philadelphia Lying-In Hospital. At the Boston Lying-In Hospital prematurity accounted for 65 per cent of the newborn mortality. In the past few years the gross premature mortality at the Boston hospital was reduced from 60 to 25 per cent. Some of this decrease in mortality is undoubtedly due to this hospital's splendid system of

heat regulation and humidity control. Also, we must not lose sight of the fact that particular attention was given to the handling of premature infants and no doubt the doctors as well as the nursing staff were becoming more adept in these cases.

THE SOURCE OF MATERIAL—Material for the following statistics was secured from the records of the Philadelphia Lying-In Hospital covering a period of 27 months (Table II). During this period there were 4 663 deliveries with 371 deaths. The total infant mortality was 81 per cent. Of the total deliveries included in this study there were 469 prematures. This is equivalent to one in every 10 births. (The Boston Lying-In Hospital reported that premature births represent only 3 per cent of their total

TABLE II—DEATHS IN 27-MONTHS PERIOD

	No. of cases	Per cent
Total deliveries	4 663	
Total deaths	371	8.1
Total prematures	469	10.0
Premature deaths	253	68.0
Premature deaths		54.0
Throw out those under 2 lb		49.0
Throw out those under 3 lb		40.0
Throw out those under 4 lb		32.0

deliveries. Of the 469 premature infants studied, 253 died. This is 68 per cent of the deaths. Of this number, 216 babies lived showing that we were able to save 46 per cent of the premature births or in other words, our premature mortality was 54 per cent.

Only cases delivered in our hospital are considered in these statistics. A good many of this group were extremely small infants and very much premature. According to the regulations of the Bureau of Vital Statistics of our State, all infants who have reached the legal age of viability, which is four and one half months' term and death occurs, must have a death certificate made out for them. Only premature infants are included in this group. Any full term baby, although very definitely immature and whose weight corresponded to many premature infants was discarded. Again only babies who were more than two weeks premature were con-

sidered. This stand was taken because we realized that it is very difficult to be exact in determining the age of the child and felt that a leeway of two weeks should be considered in selecting our cases.

These infants were handled in our regular nurseries or in small adjoining rooms. A rotating nursing staff took care of the babies. None of the rooms was air-conditioned, although the temperature of the rooms themselves was under thermostatic control and could be fairly uniformly regulated. Our methods of regulating humidity were definitely inadequate. It was difficult to get our humidity above 25 per cent. A modified hot-bed enclosed on all sides except the top and heated by electric lights was used. Unless they were closely watched, there was considerable fluctuation in the temperature of these hot-beds. Basins of water were placed underneath the mattresses near the lights in order to increase the moisture in the air.

CAUSE OF PREMATUREITY.—In a good many previous reports, notably that of

TABLE III.—PROBABLE CAUSE OF PREMATUREITY

	Total		Died	Lived
	No. of cases	Per cent		
Syphilis .....	88	18.0	60	28
Toxemia .....	60	12.0	41	19
Multiple Pregnancy..	50	10.0	24	26
Premature Separation...	24	5.0	21	3
Injury to mother...	10	2.0	9	1
Placenta praevia....	9	1.9	7	2
Cardiac .....	9	1.9	6	3
Polyhydramnios ....	4	0.8	3	1
Pneumonia .....	3	0.6	1	2
Nephritis .....	3	0.6	3	0
Myoma .....	3	0.6	3	0
Abortion .....	3	0.6	3	0
Tuberculosis .....	1	0.2	0	1
Pyelitis .....	2	0.4	2	0
Acute Cold.....	1	0.2	0	1
Asthma .....	1	0.2	0	1
Unknown .....	196	41.8	70	126

Hess, multiple pregnancies has been the greatest single cause of prematurity. In this group of cases (Table III), syphilis heads the list as the probable cause in 18 per cent. Toxemia of pregnancy comes next with 12 per cent; multiple pregnancy caused 10 per cent; premature separation of the placenta caused 5 per cent; placenta praevia caused 1.9 per cent. Cardiac, pulmonary, kidney, acute respiratory infections, and myoma of the uterus were rather insignificant as causes of prematurity in this group. Injury of some kind to the mother, such as falls or blows, caused 2 per cent of the premature births. There were 196 cases in which no definite cause

of the prematurity could be discovered, but no doubt, strains, overwork, sexual intercourse, or emotional upheavals were the causes of the premature births. Of this latter group in which no cause of prematurity could be found, 126 of them lived and 70 died.

THE INFLUENCE OF GRAVIDA.—It has been frequently expressed in the writings of men who are dealing with prematurity that multiparous mothers usually give birth to large children, even though premature, and that the babies are more easily saved than those of primiparous mothers. In this group of cases (Table IV), it is very interesting to note that the lowest mortality occurred in primiparous mothers and was 47 per cent. In premature babies of the second pregnancy, 51 per cent died; of the third pregnancy, 53 per cent; of the fourth pregnancy, 54 per cent; of the fifth pregnancy, 67 per cent; and of the sixth and later pregnancies, 79 per cent. As the number of previous pregnancies increased, the mortality of the premature

TABLE IV.—PARA

	Total	Deaths	
		No. of cases	Per cent
1st child .....	200	94	47
2nd child .....	102	53	51
3rd child .....	52	28	53
4th child .....	37	20	54
5th child .....	31	21	67
6th and above.....	49	39	79

TABLE V.—AGE OF MOTHER

	Total	Deaths	
		No. of cases	Per cent
Under 20 years.....	113	52	46
20 to 30 years.....	229	121	52
Above 30 years.....	108	61	56

infants likewise increased. In checking over the average birth weight of the premature infants born of primiparous mothers, it was noted that the average birth weight of those who died was the same as for the whole group. The average birth weight of babies born of primiparous mothers of those who lived was likewise the same as the average birth weight of the entire group.

An attempt was made to see what effect the age of the mother has on the death rate of premature infants. Three groups were studied (Table V). The first group in which the mother was under 20 years of age showed a mortality of 46 per cent;



in the second group of mothers between 20 and 30 years, the mortality was 52 per cent, in the third group in which the mother was over 30 years of age, the mortality was 56 per cent. It was rather difficult to draw conclusions regarding the influence the age and gravida of the mother have on the premature infant mortality.

**THE EFFECT OF DELIVERY**—It was rather a surprise in studying the effect of delivery (Table VI) on the deaths of

TABLE VI

Delivery	All deliveries			Prematures		
	Deaths			Deaths		
	No of cases	No of cases	Per cent	No of cases	No of cases	Per cent
Spontaneous	1 847	142	7.6	204	115	56.3
Forceps	2 198	87	3.9	109	28	25.6
Version	283	38	13.4	37	20	53.1
Breech	241	53	22.0	61	45	73.7
Section	192	16	8.3	22	9	40.9

#### Deliveries and cerebral hemorrhages

Delivery	With Hemorrhage		
	No of cases	No of cases	Per cent
Spontaneous	1 482	11	0.8
Forceps	438	10	2.3
Version	183	14	7.6
Breech	65	9	13.6
Section	88	1	1.1

premature infants to find that our lowest mortality rate occurred in babies who had been delivered by forceps. This probably can be explained by the fact that pressure on the infant's skull against rather rigid perineal muscles can be reduced by the application of forceps. The second lowest death rate in this group was in the cases delivered by cesarean section, the third lowest were those delivered spontaneously, and the highest in those delivered by breech. This corresponds very closely to what happened when a study was made of the total mortality during the same period. In those delivered by forceps, the mortality rate was lowest and in those delivered by breech, the mortality rate was highest. In a group of cases that were studied to determine the incidence of cerebral hemorrhage as related to the type of delivery, forceps stood third on the list while breech deliveries again stood last.

The length of labor (Table VII) in its relationship to premature infant mortality does not seem to enter very much into the cause of death, and yet the author feels sure that it does. The mortality rate of babies who were delivered after five

hours or less of labor was 47.3 per cent while in those delivered in five hours or more, the mortality was 53.2 per cent. The length of labor, particularly the second stage, undoubtedly has a greater tendency to be the cause of intracranial hemorrhage than when the second stage of labor is cut short by the appropriate application of forceps. It is entirely possible that the delivery of the infant by means of forceps to lessen the second stage of labor has had a great deal to do with

TABLE VII—LENGTH OF LABOR

	Deaths		
	Total	No of cases	Per cent
Under 5 hours	112	53	47.3
5 to 10 hours	124	66	53.2
Over 10 hours	186	99	53.2

TABLE VIII

Birth weight lb	Total No of cases	Deaths	
		No of cases	Per cent
1 to 2	53	53	100
2 to 3	59	56	95
3 to 4	58	45	77
		47	46
		24	20
		0	0

keeping the mortality record low in this respect.

**IMPORTANCE OF BIRTH WEIGHT**—Numerous observers have shown from time to time that the mortality of premature infants is inversely proportional to the birth weight of the infant (Table VIII), that is, the lower the birth weight, the greater is the mortality rate. In this group of cases studied, all babies under 2 lb died, 95 per cent of those under 3 lb died, 77 per cent of those under 4 lb died, 46 per cent of those under 5 lb died, 20 per cent of those under 6 lb died, and all premature infants over 6 lb lived. In this group that is studied, if we eliminate all babies under 2, 3 and 4 lb, respectively, our mortality rate drops to 49, 40, and 32 per cent, respectively.

During the last two months of pregnancy, it is known that infants average about one ounce gain in weight per day. With each additional ounce added to their weight the infant has a much better chance of surviving after birth. This is shown very definitely when the term of the child was considered (Table IX). In reviewing records to collect these data, many times it was difficult to determine the exact term of the infant. The last menstrual flow,

quickening, and the measurements of the position of the uterus are employed. No attempts were made to estimate the fetal age by the body measurements, length, foot length, head circumference, or by a study of ossification centers. It is noted that all babies under 5 months' term died. Likewise, in all babies under 6 (calendar

TABLE IX.—TERM OF CHILD

Term at birth	Deaths	
	No. of cases	Per cent
4 to 5 months.....	10	100
5 to 6 months.....	37	100
6 to 7 months.....	53	96
7 to 8 months.....	65	59
8 to 9 months.....	69	29

months' term died; 96 per cent of all babies under 7 months died; 59 per cent of those under 8 months died; and 29 per cent of those under 9 months died. This emphasizes again the importance of trying to have the mother carry the infant as long as is possible or safe for both mother and child.

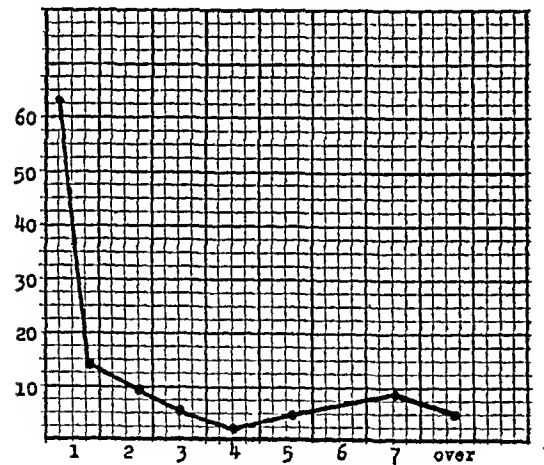


Chart I.—Length of life.

Dr. Clifford of Boston has devised a very clever method of measuring the child's head, intra-utero by means of the x-ray to determine more exactly the fetal age. This method is particularly useful in elective deliveries, where the delivery can be postponed to allow further development of the infant.

The average birth weight of the 216 babies who lived was 5 lb. 3 oz., and of the

TABLE X

	Lived	Died
Average birth weight.....	5 lb. 3 oz.	3 lb.
Average loss .....	6 lb. 9 oz.	
Loss, per cent.....	8.3	
Number regained B.W. in 21 da s	113..52%	

253 who died it was 3 lb. (Table X). The average loss in weight of the 216 who lived was 6.9 oz. The percentage loss in weight was 8.3 per cent. This loss in weight corresponds very closely with several large groups studied in which the percentage loss of weight was between 7 and 8. Of the 216 babies who lived, 113, or 52 per cent, regained their birth weight within 21 days. It is to be remembered that the normal full-term child of average weight usually regains its birth weight between six and twelve days.

THE CAUSE OF DEATH.—It is rather difficult at all times to assign a proper cause of death. Of the 253 premature infants who died, 126 were believed to have been dead before delivery, and 3 of them died during delivery—all of intracranial hemorrhage. Of this group, 124 died after delivery. In this last group of 124 (Chart I), 62 of them lived 12 hours or under; 13 lived from 12 to 24 hours; 9 lived 2 days; 5 lived 3 days; 2 lived 4 days; 4 lived 5 days; 8 lived slightly over 1 week; 1 lived slightly over 1 month; 3 lived for about 2 months. In 19 of these cases, the exact length of life was not known. This last group constitutes the emergency cases, some of which were delivered in taxicabs en route to the hospital, a few in the waiting room and preparation rooms of the Hospital where observations as to the length of life could not be made.

In studying the causes of death (Table XI) we find that syphilis alone heads the

TABLE XI.—CAUSES OF DEATH OF 253 CASES

	Before Delivery	During Delivery	After Delivery
Totals .....	126	3	124
Antopisies .....	70	.....	79
Syphilis .....	35	.....	15
Toxemia .....	16	.....	16
Syphilis and toxemia...	3	.....	2
Premature separation ..	9	.....	7
Intracranial injury ...	0	3	16
Other injury .....	3	.....	2
Pneumonia .....	1	.....	12
Atelectasis .....	0	.....	14
Malformations .....	7	.....	4
Placenta praevia .....	2	.....	4
Narcosis .....	0	.....	2
Polyhydramnios .....	2	.....	0
Placental infection ...	0	.....	1
Nephritis .....	3	.....	0
Cord about neck.....	1	.....	0
Abortions .....	3	.....	0
Chronic miscarriage ...	3	.....	28
Unknown .....	38	.....	26
Under 3 lb.....	27	.....	

list as the cause of 50 deaths; toxemia, either alone or combined with syphilis, was the cause of 37; premature separation of the placenta was the cause of 16;

placenta praevia caused 6 deaths, intracranial hemorrhage caused 19 deaths, injury to the baby of a nature other than intracranial hemorrhage caused 5 deaths, pneumonia caused 13 deaths, atelectasis 14, malformations, 11, narcosis, 2, polyhydramnios, 2, placental infection, 1, nephritis, 3, a tightly wrapped cord about the neck, 1, and abortion inflicted by the mother on herself, 3. In 3 cases there was a history of chronic and repeated miscarriages. It was impossible to determine the cause of death of 38 babies who died before delivery. However, 27 of this group were under 3 lb in weight. Likewise, there were 28 babies who died after delivery, in which the causes were not determined. Twenty-six of this group were under 3 lb in weight. One hundred forty-nine autopsies were performed on this group of 253 in which a careful search was made of the entire body in an attempt to discover the cause of death. Such autopsy examinations, however, fail to disclose any lack of physiologic function and more than likely miss a great many structural defects unless extensive microscopic studies of all organs are made.

Syphilis is one of the big problems we are confronted with in trying to prevent prematurity and in the successful management of the case after birth. Of the cases of syphilis in this group, 44 were treated prior to birth, 24 of them died, making a mortality of 54.5 per cent. There were also 44 untreated cases with 36 deaths, making a mortality of 81.8 per cent. This finding has been demonstrated on a number of occasions in other clinics.

The rôle that infection plays as the cause of premature deaths is well known, but in this group of cases, apparently it did not play much part, particularly so, if the 50 cases of syphilis were eliminated. The 13 cases of pneumonia that were proved and one case of generalized sepsis in the child due to placental infection is a small number of deaths due to infection.

**PATHOLOGY IN LIVING BABIES**—When observations were made as to the extent of pathology found in the premature who lived (Table XII), again it was found that infection did not play a very great rôle. There were 3 cases of thrush, 1 case of impetigo, 4 cases of diarrhea, 3 cases with acute rhinitis, 4 cases with intracranial hemorrhage, 1 case with gonorrheal ophthalmia, 1 baby had a large abscess of the thigh due to a sloughing angioma, 1 case

of inguinal hernia which had become incarcerated, could not be reduced, and operation was performed, there were 3 cases of pylorospasm, and 1 case of pyloric stenosis. The latter was a rather unusual case, in that the child was 7 months' term, had a stormy start in life, did very well on treatment, remained in the hospital 2 months and 2 weeks after discharge, when it was 2 weeks over full term, developed a typical pyloric stenosis, and was operated on successfully. Forty seven of the babies who lived developed asphyxia with recurrent cyanotic attacks, sometime during their stay in the hospital, and a good many of the babies who lived only a short time also developed cyanosis. In this group of 216 who lived, 147 were delivered while the mothers were under anesthesia, ether being the chief anesthetic used.

TABLE XII—PATHOLOGY FOUND IN PREMATURES WHO LIVED

Asphyxia	47
Intra Cranial Hemorrhage	4
Thrush	3
Impetigo	1
Tetany	2
Atelectasis	3
Diarrhea	4
Malformations	3
(1) C, eyes	1
Heart murmurs	1
Hernia	1
Pylorospasm	3
Pyloric stenosis	1
Paralysis	1
Jaundice	2
Dermatitis	1
Acute rhinitis	3
Abscess thigh	1
G I hemorrhage	1
Residence in Hospital	
Shortest 9 days	(7)
10 to 20 days	134
20 to 30 days	22
30 to 40 days	23
40 to 50 days	17
Over 50 days	13
Longest 171 days	

**DIGESTIVE DISTURBANCES**—Just as other systems of the premature child are inadequate to meet physiologic needs, so is the digestive system and in many of these cases, the digestive capacity is decidedly limited. Some of the first indications of disturbance of the gastro-intestinal tract are the refusal of food, slight vomiting, with a change in the character and number of stools. Careful attention to the feeding during the first ten days will often prevent these digestive difficulties. It has been our experience that these so called minor disturbances dare not be ignored, for they are frequently followed by persistent vomiting, profuse diarrhea, rapid loss of weight, fever accompanied by de-

hydration, and disturbance of the acid-base balance.

Some of these babies undoubtedly have difficulty outside the gastro-intestinal tract. Autopsy performed on such cases might show a pneumonia or some other serious infection. While the child is living, it is difficult to decide whether the digestive upset is a primary factor, or whether it is secondary to some other pathologic change.

**BLOOD CHANGES.**—Weekly blood counts on premature infants disclose the fact that there is a more rapid and greater fall in the hemoglobin (Chart III) and red cells (Chart II) in premature babies than occurs in normal full-term infants. It is quite common for the red cells to fall two million in six to eight weeks' time, and for the hemoglobin to decrease by 8 to 10 gm.

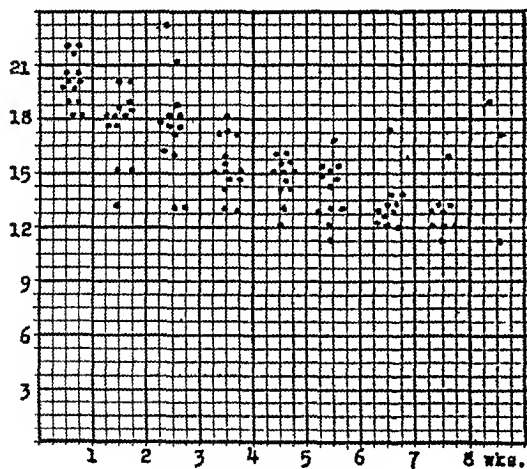


Chart II—Hemoglobin

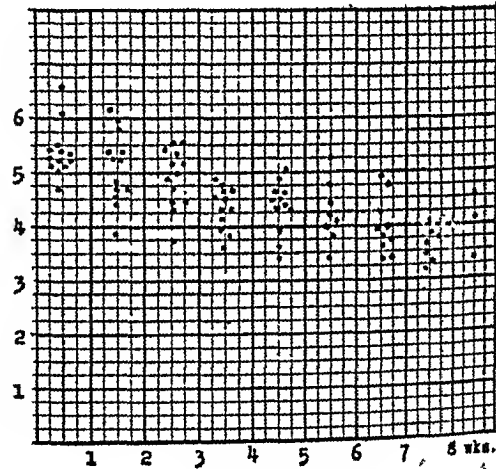


Chart III.—Red cells.

in the same length of time. The cause of this sudden and rapid drop of hemoglobin and red blood cells may be due to two factors: the bone marrow and other blood-forming organs, because of their immature development are unable to meet the demands made for new blood; the supply of iron stored in the body or contained in the food is usually inadequate for the needs of the premature infant. To a certain extent, the development of this anemia can be checked by the giving of fairly large doses of iron combined with minute doses of copper. It seems necessary to supply this iron in some inorganic form.

The length of time the premature infant stays in the hospital (Table XIII) requiring close nursing supervision and medical attention adds a great deal to the overhead costs of the maternity hospital.

The shortest stay of any in the hospital was 9 days. There were 7 in this group. The longest stay in the hospital was 171 days. This was the child who had the strangulated hernia when it was 2 months old, followed by a successful operation and stormy convalescence. One hundred and thirty-four were in the hospital from 10 to 20 days; 22, from 20 to 30 days; 23, from 30 to 40 days; 17, from 40 to 50 days; and 13, for over 50 days.

**FEEDING.**—One of the most important factors in the care of the premature infant is that of feeding. This includes not only the choice of formula, but the amount, method, and frequency of feeding. It can be safely said that most of the premature babies should not nurse at the breast, while at the same time,

breast milk is the food of choice. Of the 216 cases who lived, 166 were fed breast milk. Complementary feeding was needed in 88 of this group. As a general rule, nothing was given to these premature infants during the first 6 to 12 hours after birth. At the end of this period, boiled water with a few drops of whisky was given at intervals. During the past year, attempts have been made to utilize the hydrating solution as suggested by Kugelmass, during the first 2 or 3 days after birth. Our experience leads us to the conclusion that this is readily taken, that vomiting is much less, and that dehydration is successfully combated. In this group, at the end of 12 to 24 hours, depending upon the size and condition of the baby, breast milk was started. They were usually fed every 2 hours, giving

from one to four drams at every feeding, depending upon the individual case. When breast milk was not available, skimmed lactic acid milk was used in most of these cases. The combination of breast milk, and skimmed lactic acid milk as complementary feeding seemed to be quite successful in the majority of cases. When it was necessary to use whole lactic acid milk particularly in the absence of breast milk, distention of the abdomen, and rather frequent, small, formed, foul stools resulted, with irritation of the buttocks and considerable tendency to vomiting. A few of these babies were fed on formulas of evaporated milk, sweetened condensed milk was used in a few cases, several forms of dried milks also were used. The dried milk which apparently is best suited for premature infants is Similac. At the present time, most of our premature infants who are on formulas are given Similac and we believe results will be better than in the present group reported. Whenever possible, babies were fed with a bottle, a few of them needed the Breck feeder, and nearly all the small babies had to be fed by catheter, passed through the mouth at each feeding.

Mothers who have given birth to premature babies frequently are slow to establish lactation and, when established, it is usually difficult to maintain. Every effort was made to stimulate the secretion of breast milk and to maintain it by use of the electric breast pump, by hand expression, and by alternating hot and cold compresses, with gentle massage of the breasts. A great deal of the success of this procedure depends on the intelligence and faithfulness of the nursing supervisors.

#### CONCLUSIONS

- 1 A study of 469 premature infants covering a 27-month period is submitted.
- 2 The cause of prematurity is difficult to assign. More attention needs to be placed upon finding the cause in order to prevent these early births.
- 3 The relation of birth weight, term, gravida of the mother on premature mortality is given.
- 4 It appears that forceps delivery is the safest method in such cases.
- 5 Close attention to temperature and humidity factors is necessary.
- 6 Breast milk is the food of choice for premature infants.

### A PLAN TO EVALUATE INDEPENDENTLY SEROLOGIC PROCEDURE FOR THE DIAGNOSIS OF SYPHILIS IN THE UNITED STATES

Since the serologic conferences at Copenhagen and Montevideo, there has been an increased interest in the relative value of serologic tests for the diagnosis of syphilis. At these conferences the test of only one serologist of the United States was presented for consideration. There are a number of excellent serologists in this country, many of whom have described original modifications of the complement fixation and precipitation tests for syphilis. It is felt that the tests of these workers merit consideration.

The United States Public Health Service is cooperating with the American Society of Clinical Pathologists in the drafting of a plan to evaluate independently serologic procedure for the diagnosis of syphilis in this country. Briefly, the plan contemplates the collection of specimens of blood from at least 1,000 individuals and the distribution of comparable specimens to the laboratories of serologists who have described an original modification of a complement fixation or precipitation test for the diagnosis of syphilis. The donors of the specimens will be carefully selected so as to measure both the specificity and sensitivity of the serologic procedure. The sending of specimens to workers at considerable distance from the point of collection will be expedited by the use of the most modern transportation facilities while the delivery of specimens to nearby serologists will be delayed so as to

make the delivery time approximate that for those workers at the more remote points.

A committee of five members consisting of two specialists in the field of clinical syphilology, two members of the American Society of Clinical Pathologists and one officer of the United States Public Health Service will organize the plan of study and after all laboratory reports have been submitted by participating serologists, will interpret the results on the basis of clinical findings. The collection of the specimens will begin about December 1, 1934 and a number of serologists will be invited to take part in the evaluation scheme.

It is possible that the name of some serologist who has described an original modification of a test for syphilis may have been inadvertently omitted. Any serologist desiring to participate will be extended an invitation upon presentation of suitable proof as to the originality of his modification of a serologic test. A brief description of the plan will also be sent to those workers who may be interested.

Correspondence should be addressed to the Surgeon General, United States Public Health Service, Washington, D. C.

As a result of a "crusade" by a local newspaper, Utica has launched a campaign to eliminate ragweed and other plants responsible for hay fever and allied conditions.

## DIAGNOSTIC VALUE OF ASPIRIN TEST IN RHEUMATIC CONDITION

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In the issue of the NEW YORK STATE JOURNAL OF MEDICINE of September 15, 1933, the author published an article entitled "Aspirin Test to Determine the Advisability of Removal of Foci in Rheumatic Conditions." Due to lack of space all clinical data were omitted, but as a great deal of interest has been evinced in this paper, it is believed that its value would be enhanced by a brief report of clinical evidence in support of the statements set forth therein.

Before mentioning any case histories it is advisable to state that it has been the author's custom to give aspirin to patients suffering from rheumatic pains. The negative response to a dose of aspirin, that is, no influence on the pain, is the deciding factor in this test and governs recommendation for removal of foci. The author refuses to sacrifice a tooth or excise the tonsils if the patient is not relieved. If the test is positive, that is, if relief of pain is obtained, the presence of a streptococcus infection can be assumed, although the active focus may be located in other places than the head.

The following cases are taken at random: A patient in the dispensary had her teeth extracted and tonsils removed for acute pains without relief. A dose of aspirin had no effect but she was quickly relieved by atophan. The examination of the blood showed 6.5 mg. of uric acid.

We have observed many cases in the dispensary in whom such operations had been performed without result and in all of them the patient failed to respond to aspirin. Every one of these patients could have been spared the ordeal.

The following cases will illustrate the diagnostic value of the aspirin test.

Some years ago we treated a girl for tuberculosis of the hip joint which eventually healed with shortening of the leg. She came to the clinic later complaining of severe pain in the hip which had lasted for some time. We gave her aspirin and the pain disappeared at once. The x-ray showed a perfectly healed tuberculosis of the joint. Further examination revealed that tonsils and teeth were infected and an operation cured her from her pain in the

A patient, 57 years old, complained severe pain with restriction of motion the hands, shoulders, the vertebrae, and legs. He had no teeth but reacted to aspirin with complete subjective relief. A radiograph of the toothless jaw revealed a number of infections in the jaw where infected teeth had been extracted without curettage. The abscesses were operated by Dr. Ralph Brodsky and a pure culture of *Streptococcus viridans* was obtained. The patient improved steadily after the operation.

A woman of 60 complained for 10 years of severe pain in the right sacroiliac region. A swelling, very tender to touch was found there and the roentgenogram showed indistinct contours of the sacro-iliac junction at that spot. She had no teeth. One dose of aspirin gave prompt relief. A roentgenogram of the teeth showed 3 buried roots and a large abscess on the left side of the lower jaw. The patient was operated and began to improve immediately. Within two months the pain had disappeared completely.

Many such cases on the positive as well as on the negative side could be quoted but only mention need be made that those cases which had active foci, although heat treatments produced nearly always exacerbation of the rheumatic symptoms, particularly the pain. This fact also is of great prognostic importance and a valuable guide for indications. We can say with reasonable certainty that a focus is active if after a course of treatment with heat procedures which should relieve the condition, an improvement is followed by an exacerbation. Many physicians are inclined to blame external factors, such as the weather, for it. The writer believes, however, that such exacerbations are due to the increased transportation of bacteria and toxins into the joints treated by hyperemia-producing modalities. This assumption has been extremely valuable in looking for foci.

Thus we may say that exacerbation after heat treatments indicate an active focus, relief by salicylates points to streptococcus infection, failure of relief indicates the necessity of looking for another

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## EDITORIALS

### Atlanta's Experiment

Mark Twain said that "everybody is always complaining about the weather, but nobody does anything about it." A rural doctor in Georgia, at the convention of his State Medical Association, made a rather similar remark about the medical economic crisis. "All this talk about medical economics is just 'bull'," he declared. "We are not going to do anything about it. We meet, talk, go home, and cuss, and it is all the same." Medical societies pass resolutions that are published in the news papers, speakers flay the report of the Committee on the Cost of Medical Care, but much of the fire ends in smoke.

The physicians of one city, however, have decided that the policy of mere talk has gone on long enough. The medical men of Atlanta have had a committee at work on the matter for nearly two years, the committee has formulated a plan, the plan has been adopted, and on April 1 it was put into operation.

The Atlanta plan is based upon the minority report of the Committee on the Cost of Medical Care. The minority report, it will be remembered, recommended

a county medical society plan for furnishing complete medical care to persons in the low income bracket. It advised the furnishing of medical care by the individual physicians as they are at present organized in county societies, the plan to be kept under professional control, and financed by annual payments under a group arrangement. The plan, too, guaranteed the absolutely free choice of physician and was to include all or a large majority of the county medical society, with the funds administered on a nonprofit basis.

Such a plan places the responsibility for the medical care of the community squarely upon its organized physicians and bars control by lay corporations and insurance companies. The quality of the medical service is thus guaranteed and the possibility of unethical competition is removed because all the physicians of the community are included and the fee schedule is fixed. Solicitation of patients, underbidding for contracts, and other evils of ordinary plans are eliminated, and the essential personal relationship of doctor and patient is preserved.

It is upon this basis that the Atlanta physicians have built their plan, after nearly two years of careful study by their committee. They have organized the Fulton County Medical Relief Association, and out of 387 members of the Fulton County Medical Society, 268, or more than two-thirds, have indicated a desire to cooperate. Of the rest, some are indifferent, some more or less hostile, and "some few" irreconcilable.

The report to the Medical Association of Georgia, from which these facts are gleaned, points out that the new Association does not agree to furnish medical service to anyone, but simply agrees to pay the doctor who renders the service. Any co-operating member of the County Medical Society may respond to calls from the beneficiary members, or he may decline the call precisely as under the old plan.

Patients of low income may obtain medical care under this plan for \$1 initiation fee and \$1.50 a month. The privilege of membership is open to any white person in Atlanta and vicinity who is in good health, except drug addicts and alcoholics. To

keep the well-to-do from flooding in the income level of those who join is not to exceed \$75 per month for persons without dependents, \$125 per month for those with one dependent, \$135 for those with two, \$145 for those with three, and \$150 for those with four. Membership is limited to individuals. Separate membership may be carried for other members of the family. The Association is controlled by a board of five directors, all physicians, elected from the membership of the County Medical Society and serving without pay. Details are handled by a lay manager.

It is too early to forecast the fortunes of the venture, but the committee feels optimistic. It figures that the Association must have 5,000 beneficiary members on its rolls to ensure success, and 10,000 would be better yet. Physicians, too, must accept lower fees than are considered standard, and the County Society has adopted such a schedule upon the realization that, even if lower, it will produce a larger return from the same group than the old plan did.

Here, then, we have an honest effort to head off the threatening socialistic plans with a scheme that will preserve the essentials of present medical practice and ethics. It meets the regimenting plan with a doctors' plan. It meets any proposed or paper plan with a plan already in actual operation. It may not be the best one imaginable. If anyone can suggest improvements, so much the better. But if we can meet the socializers and regimentalists with well-based medical plans already adopted and in operation, then their fine-spun schemes and dreams will not have, if the expression may be pardoned, a Chinaman's chance.

### The Modern College Girl

Almost every physician has somewhere among the families under his care certain young women, in college or of college age, who are showing the strain of modern life and are more or less of a problem to their parents and to themselves. Their natures seem to change in puzzling ways. They may adopt a hard and metallic exterior that no one can melt; they may plunge into a whirl of frivolity and sacrifice all the serious and sensible things of life; or they

may even throw all the old moral standards overboard to please the opposite sex and then discover too late that the opposite sex has lost all respect and regard for them. These are only a few of the psychological manifestations that make the young woman of to-day a problem.

A deep study of this matter has been made by Dr. Elizabeth G. Whitney, of Palo Alto, California, Consultant in Mental Hygiene of the Department of Hygiene and Physical Education for Women at Stanford University. In an able paper read before the American Student Health Association at Chicago, Dr. Whitney traced the feminine psychology from primitive times to the present, and drew upon her wide practical knowledge of the college girl to find that the root trouble is that she is under two strains, pulling her in opposite directions.

First of all, her nature is essentially womanly, maternal. She cares, she loves, she trains, she nourishes. She lives in the domain of the affections and emotions. From the dawn of time these qualities have held sway in her being, and she can no more rid herself of them than the leopard can change his spots. The man, on the other hand, is by nature fitted for doing and making. He goes forth to battle with the world as naturally as the fish takes to the water.

But in recent years woman has decided to invade man's field. She will make and do. She will fight the world. So our college halls are all aflutter with femininity. Our city offices frequently resemble a tea party. Studious? Yes. Efficient? Yes. But we find after a bit that a number of the young women show signs of cracking under the strain. Their nerves or their physical health begin to give way or they exhibit some of the puzzling peculiarities noted in the opening paragraph.

Why does this happen? The secret of it is that the girl can invade man's domain if she likes, but she cannot throw off the shackles that still bind her to her own nature. She is pulled in two directions. She is torn in one direction by the desire to be a man, or to do a man's work, and in the other by the basic instinct to be a woman. Is it a wonder, asks Dr. Whitney,



that the adolescent girl is confused in the melee, or that she shows the effect in unhappiness, adjustment problems, neurosis, and perhaps breakdown? Where the primitive or mid-Victorian girl moved with serenity and ease through her daily round, the modern girl is like an overstretched violin string, ready to snap. Foreign visitors observe this

It is true that the girl student often outdoes the boy, but it is at the price of hard driving such as the boy will not do. It is Dr Whitney's observation that the boy moves more familiarly and carelessly in his college life. He can neglect his work or plunge deeply into it, he is a fish swimming in his own element. The successful girl student, on the other hand, becomes obsessed by her lessons, works after midnight week in and week out, and loses all sense of the real values of life. Another girl will react in the opposite direction, drift aimlessly about, weep because she is "a complete failure," and threaten suicide over a bad report.

Torn by these warring forces, some girls give the picture of great insecurity and confusion with shyness, awkwardness, nervous habits, even hysterics. Another under the same strain will throttle her emotions with an iron hand, assume a glacial exterior, repel boy and girl friends, and pursue her solitary way. Both are resentful when they are summoned for psychological help, and Dr Whitney remarks with great acumen that neither one knows that she is suffocating a whole aspect of herself without which she cannot live. Both deny it, but when led to own up that they have and need feminine feeling, they astonish themselves by the wealth which comes welling up, and the new ease of their adjustments.

A darker picture is presented by the girl who has been misled by the flood of talk about sexuality to abandon woman's instinctive attitude and adopt the man's point of view. Man has still much of the primitive savage in him, and sexuality is to him often merely a sensation, while to the woman it is bound up with a hundred tender feelings. If, then, she tries to take the man's view, she outrages all the strong-

est impulses of her own nature, she finds her male "pal" has grown cold and indifferent, and she becomes hard, cynical, disillusioned, lacking in feeling, with no soul, because it has been paralyzed, with no respect for men, with no belief in the real value of anything. A reckless gayety covers a bitterness of despair.

What all these young women have forgotten is that they are women. They try to ignore or suppress what cannot be ignored or suppressed. The cure is for the girl just to be herself, to be a woman, to give a natural outlet to the feelings that fill her being as the waters fill the sea. She ought to have warm, intimate friendships with other girls, to make her social contacts on the impulse of her own heart, and not try to subordinate it to her work on her ambition. She should have many warm friendships with boys, too, guided by her unerring instincts and says this keen student of the feminine heart, "reserve her deepest love for the one man who can respond in kind."

### A Favorite Quack Claim Punctured

Every quack who has some bogus cure to foist on the gullible public seems to try to poison his victim's mind against the medical profession. "The doctors are so conservative that they will not try any new remedy," declares the impostor, "they fight anything new, and a wonderful discovery like mine never has a chance." The doctors form "a ring," or "a trust," he avers, and they are so "hidebound" that they conspire together to boycott any new treatment or compound that might displace the old.

How ridiculous this claim is every doctor knows, of course, but half his patients do not know it, and in fact this libel is fed to the public every day by hundreds of montebanks who coin money out of it. And while the doctor knows that it is wickedly false, he cannot always offhand make a convincing reply. He knows that hundreds of proffered "cures" and "discoveries" are rightly rejected by the medical profession because they do not do what they claim, but he does not remember at the moment the hundreds of new remedies of real worth and value that are being adopted so rapidly that the ordinary physician can hardly keep up with them.

Far from being inhospitable to new ideas, medicine is alive with them, very much alive, so alive that great medical laboratories are swarming with countless investigators who experiment with everything on earth, in the earth, and under the earth, to cure the ills of man. The fact is that no discovery is too strange or novel to get a welcome if it can make good. A woman doctor with a full quota of feminine curiosity tries injecting a solution of ordinary methylene blue dye into the veins of rabbits with cyanide and carbon monoxide poisoning, and saves them. Now would-be cyanide suicides and victims of motor-exhaust fumes are snatched back from the jaws of death by something originally intended merely to give objects a cerulean tint. That is medical hospitality to new remedies.

Again, a doctor in Mexico, experimenting with bacteria, announces that he has discovered a "bacteriophage" that eats the enemy bacteria with such an appetite that cultures of them disappear entirely. This certainly sounds like a page from the Arabian Nights or Alice in Wonderland. The "hidebound" doctors would surely hoot this out of court if the quacks are right about them. But nothing of the sort happens. The doctors have welcomed the find with open arms, and the bacteria eater has promptly been put to work.

A new remedy may be as common as air or sunshine. It may be something you can buy at the market. From time out of mind the doctors were baffled by pernicious anemia, and then someone found that all you had to do was to order plenty of liver from the meat man and eat it in generous helpings, and the fatal malady was fatal no more. Where was the "conservative" profession that rejected everything new? Nowhere, except in the imagination of the quack and his victim. Everything is welcomed that will aid the great battle for health. The liver's neighbor and collaborator, the stomach, is also good for anemia, and we find the medical manufacturers slicing, drying, and grinding hogs' stomachs into a palatable powder that restores the pallid anemic sufferer to ruddy health. Hogs' stomachs! Is this in China? No, in "conservative" America. Yet the quack would have the public believe that the doctors rejected his own vile stuff out of "conservatism" or "jealousy."

Medicine, too, welcomes everyone who can help. The electric knife, that can do

many operations formerly impossible, was developed with the aid of the electrical engineers. The public may be very sure that if Mr. Quack had anything of value it would have been adopted by the profession with enthusiasm. Let us suppose that someone was crazy enough to suggest abolishing pain by pulling out the nerves that felt it! Wouldn't the doctors just naturally send anyone like that to the asylum? Well, that is exactly what was suggested, and that is what is being done in the treatment of angina pectoris, spastic paralysis, and many other ailments where the nerves have become only sources of mischief. Was it one of the brilliant quack geniuses who found that some kinds of insanity could be cured by giving the patient malarial fever, and did he keep on experimenting until he found that an artificial fever could be produced by an electrical machine to do the same thing? Hardly. It took the "backward" medical men and the orthodox electrical engineers to do that. Offhand, would you say it was the doctors or the grannies of the Kentucky mountains who use mistletoe and watermelon-seeds for high blood pressure? Oh, you know, of course; but ask any layman and see what answer you get.

The truth is that it is the doctors themselves who are trying a thousand things for all the ailments that have refused thus far to yield to their skill. For one quack remedy that is found worthless and rejected, the experimenters in the laboratories throw aside a hundred of their own. But they keep on trying. They do not take the experiment that failed and try to foist it on the public under a smoke screen of abuse of honest practitioners. They work on, perhaps for years, until the real remedy is found, in the sure knowledge that the entire profession, the world around, will adopt it for the welfare of all humanity.

The facts sketched here are well-known to every intelligent physician, but may not be at the tip of his tongue at a time when it is desirable to answer the claims of the medical charlatan. They will be found ably and interestingly presented, with many more, in a new volume by Dr. Edward Podolsky, entitled, "Medicine Marches On," published by Harpers. Medicine is marching. It is not standing still, and it is not looking backward. Its face is toward the future, and it welcomes everything good that it finds in its path.

# SCIENTIFIC PROGRAM OF THE TWENTY EIGHTH ANNUAL MEETING

## THIRD DISTRICT BRANCH

### MEDICAL SOCIETY OF THE STATE OF NEW YORK

*Potts Memorial Hospital, Livingston, N Y*

Wednesday, September 19 1934, 10 00 A M Daylight Saving Time

#### MORNING SESSION

The Columbia County Department of Health"

Organization—

William D Collins, M D, Hudson, President, Columbia County Board of Health  
Relation to the Physician—

Frank C Maxon, M D, Chatham, President, Columbia County Medical Society

A Modification of the Detroit Plan in Administering Public Health—

Louis Van Hoesen M D Hudson, Commissioner of the Columbia County  
Department of Health

Discussion by James F Rooney, M D, F A C P Albany

Rehabilitation of the Tuberculous at the Potts Memorial Hospital, Livingston, Columbia  
County, New York

Charles J Hatfield, M D, President, Potts Memorial Hospital, Director, Henry  
Phipps Institute for the Study, Treatment and Prevention of Tubercu-  
losis, University of Pennsylvania Philadelphia

Harry A Pattison, M D, Director Potts Memorial Hospital

Leonard Marion Neisen M D Resident Physician, Potts Memorial Hospital

Luncheon and Introduction of Guests

#### AFTERNOON SESSION

#### Election of Officers

'Address by the President, Medical Society of the State of New York"

Arthur J Bedell, M D, Albany

Some Theories and Facts Regarding the Treatment and Prognosis of Early Syphilis"

Earl D Osborne M D, Buffalo Professor, Dermatology and Syphilology, University  
of Buffalo School of Medicine

*The Potts Memorial Hospital is located at Livingston Columbia County an Route 9 eight miles  
south of Hudson*

## PROGRAM OF THE ANNUAL MEETING

### SIXTH DISTRICT BRANCH,

#### MEDICAL SOCIETY OF THE STATE OF NEW YORK

*Central High School Building, Cortland, New York*

*September 26, 1934 at 9 30 A M, Daylight Saving Time*

9 20 Address of Welcome Dr W A Wall, Cortland, N Y, President, Cortland County  
Medical Society

9 30 Syphilis of the Central Nervous System—Dr Hugh S Gregory, Binghamton, N Y

Discussion Dr Eugene E Bauer, Owego, N Y

Dr Orin Q Flint, Delhi, N Y

Dr Stewart Piper, Elmira, N Y

10 00 Traumatic Surgery Essentials in Prevention and Cure of Disabilities—Dr Martin B  
Finkler Ithaca, N Y

Discussion Dr Harry Fish, Waverly, N Y

Dr Thomas F Manley, Norwich, N Y

10 30 Treatment of Pneumonia—Dr Russell L Cecil, New York City

Discussion Dr Chifton H Berlinghof, Binghamton, N Y

Dr Allen W Holmes Watkins Glen, N Y

11 00 Surgical Management of Carcinoma of the Rectum and Rectosigmoid Motion  
Pictures—Dr Claude F Dixon, Mayo Clinic, Rochester, Minnesota

Discussion Dr Guy S Carpenter Waverly, N Y

Dr Ross G Loop Elmira N Y

12 00 Luncheon—Address The Journal of the Medical Society of the State of New York—  
Dr Arthur J Bedell Albany N Y, President, Medical Society of the State of N Y

2 00 The Tragedy of Appendicitis—Dr Donald Guthrie, Sayre, Pa

Discussion Dr Arthur W Booth Elmira, N Y

Dr James Greynough Oneonta N Y

2 30 Treatment of Bacterial Endocarditis—Dr Ronald L Hamilton, Sayre, Pa

Discussion Dr George Mackenzie, Cooperstown N Y

Dr Norman Moore, Ithaca, N Y

- 3:00 Intestinal Obstruction—Dr. Wm. D. Johnson, Batavia, N. Y.  
 Discussion: Dr. Dwight G. Dudley, Endicott, N. Y.  
 Dr. Wm. H. Hobbs, Binghamton, N. Y.  
 Dr. Frank J. McCormick, Ithaca, N. Y.
- 3:30 The Technique of Obstetrical Forceps—Dr. Wm. T. Getman, Buffalo, N. Y.  
 Discussion: Dr. Herbert W. Fudge, Elmira, N. Y.  
 Dr. John W. Judd, Ithaca, N. Y.

*Sessions will start promptly.*

The Ladies will be furnished transportation from the High School Building to the Cortland Country Club where luncheon will be served. Price \$1.00. Following luncheon there will be cards and golf.

## TWO OLD NEW YORK HOSPITALS JOIN FORCES ON SEPTEMBER FIRST

*New York Post-Graduate and Old Skin and Cancer Hospital Boards Reach Agreement*

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In making the joint announcement for their respective institutions, Mr. Allen Wardwell, Chairman of the Executive Committee of the New York Post-Graduate Hospital, and Mr. Charles C. Harris, President of the Stuyvesant Square Hospital, stated that the pooling of the resources of the two institutions and the incidental economy in operation would make it possible to carry out more fully the purposes of each, not only with regard to research and treatment in the fields of cancer and diseases of the skin, but more particularly, the program for post-graduate medical education and service to the public generally.

According to the terms of the agreement between the two institutions, which goes into effect tomorrow, September 1st, it is provided that the identity of the Stuyvesant Square Hospital shall be maintained, and the membership of the Board of Directors of the Post-Graduate Hospital extended to include members of the present directorate of the Stuyvesant Square Hospital.

The Stuyvesant Square Hospital retains control of its capital funds, including any funds subsequently received by gift or bequest for maintenance or endowment of beds, while the Post-Graduate Hospital takes over the management and maintenance of buildings and equipment and the general administration of the hospital, funds for which are provided from the income of the Stuyvesant Square Hospital.

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general hospital are available only for the graduate physician.

The properties of the two affiliated institutions are contiguous, occupying the entire two-block frontage on Second Avenue between 19th and 21st Streets and extending, in the northern block, almost through to First Avenue. The two institutions have long worked in a friendly relationship so that this affiliation in the interest of both, comes as a logical step, not only making for more economical operation through the avoidance of duplication of activity and overhead, but by their inter-dependence making it possible to materially increase the quantity, as well as the quality, of their effort.

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# Medicolegal

LORENZ J. BROSNAN, ESQ.  
Counsel, Medical Society of the State of New York

## Revocation of Physician's License—Unprofessional and Dishonorable Conduct

A decision recently rendered by the highest Court of one of the mid-Western States is an excellent example of progress that is being made to rid the medical profession of its unfit and unworthy members.

A certain L. had received a license to practice medicine and surgery, and during the year following, after notice and hearing upon charges made, the state board of health revoked his license, under the following provisions of the Medical Act of the State:

"The board may refuse to license individuals of bad moral character, or persons guilty of unprofessional or dishonorable conduct, and they may revoke licenses, or other rights to practice, however derived, for like causes, and in cases where the license has been granted upon false and fraudulent statements, after giving the accused an opportunity to be heard in his defense before the board as hereinafter provided. Habitual drunkenness, drug habit or excessive use of narcotics, or producing criminal abortion, or soliciting patronage by agents, shall be deemed unprofessional and dishonorable conduct within the meaning of this section."

The record of L. which was before the Court is a most amazing one, and it is necessary to summarize it at some length.

After he received his preliminary education in the New York City public schools he had taken a premedical course at a recognized medical school in Brooklyn followed by a year and a half of medicine at one of the leading medical schools in Manhattan. He realized that he was about to fail at the latter institution and with several others in the same predicament entered a medical college in the state where he eventually obtained his license. After spending two years there he graduated. The following year he took the medical examination in that State, M., but he failed to pass. For the two years following he obtained employment at a dispensary in the State of M. After that, L. returned to New York, and although not licensed to practice, engaged in medical work as an assistant to a certain doctor in Brooklyn.

As his next step in trying to obtain a license he considered practice in the State of I. He learned that the licensing board of that State looked with disfavor upon medical schools such as the one from which he had graduated, and was invested with discretion as to the admission of graduates from such schools. He was referred by a friend to a certain Dr. K. in New York City who was reputed to have contacts with the I. State Board, and who might be able to arrange that he could be admitted for examination in that State. He approached Dr. K. and was informed that for \$2,000 the matter could satisfactorily be arranged. L. was unable to raise that amount of money at the time.

Some time later through Dr. K. he made the acquaintance of a certain B. who resided in the State of I. and entered into an elaborate scheme to obtain licenses in I. for himself and several other Eastern men. The arrangement agreed upon was that B. was to obtain permission for L. to take the state examinations as his compensation for bringing to B. the money, at six to eight hundred dollars each, which was to be used to obtain licenses for the other Eastern men to practice in the State of I. The money was paid over and purported licenses were delivered to L. for each of the "candidates." It later developed that the said licenses turned out to be forgeries and the "candidates" found themselves to be without any authority to practice medicine in I. At least \$2,500 changed hands during the deal. L. himself received his expenses, out of the bribery money, and whether he received any other part of the money is not clear.

After the fake licenses had been delivered, L. attempted to arrange through B. to obtain as his reward the privilege of taking the examination. He found that obstacles were in his way which B. failed to remove, and finally he left the State of I. and abandoned his scheme to obtain admission to practice there.

About a year later he was arrested and indicted for his part in the conspiracy. He and certain others involved were tried

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would, or under what circumstances, institute bad moral character and unprofessional and dishonorable conduct, and we do not think the Legislature intended to do so."

### Claimed Fracture of Hip as Result of Fall from Hospital Bed

A boy about 13 years of age was operated on at the X. Hospital. The operation was one for osteomyelitis. Following his operation he stayed at the hospital for approximately 22 weeks. Thereafter he was discharged against the advice of Dr. A. and other physicians, but at his parents' insistence he left the hospital. He then spent considerable time in four other hospitals.

It was claimed that a day or two following the original operation the boy fell out of bed in attempting to call the nurse who did not answer the bell.

Some time thereafter a suit was commenced against the hospital and the charge was made that due to the careless and negligent treatment of the nurses and doctors, the boy fell out of bed and sustained a fracture of the left hip.

Upon the trial it was definitely proved by the x-ray pictures taken at the X. Hospital, and by a long series of x-ray pictures (some 25 in number) taken at the other four hospitals, and by means of expert testimony in interpreting said x-ray pictures that the child never had a fracture of the left hip, and it was definitely proved that the osteomyelitis had spread to the hip joint from the original site, namely, the knee.

After all the testimony was presented by both sides the trial judge directed a verdict in favor of the defendant thereby exonerating the doctors and the hospital.

### Claimed Failure to Remove Rubber Drain

A girl about 17 or 18 years of age came to Dr. A.'s office complaining about a large swelling on the left side of her neck which she claimed had bothered her for approximately three and one-half weeks. She stated that previously she had been treated by Dr. B. and that he had opened the swelling and drained it. Dr. A. made a diagnosis of cervical adenitis with possible quinsy. He dressed the wound and told her to come back in a few days.

Some four and one-half years later a suit was brought against Dr. A. claiming

that the girl had been treated at his office approximately forty or fifty times, and during the course of treatment he had placed in the wound a rubber drain, and that he permitted the said rubber drain to remain in the wound for a period of some two months, and that he discharged the patient leaving the rubber drain in the wound.

Upon the trial of the action, Dr. A. denied that he had ever operated upon this girl and that according to his records and his recollection he never saw her more than two or three times, and at no time had he inserted a rubber drain. After the girl testified that she had gone to Dr. A.'s office some forty or fifty times, she was asked to identify Dr. A., and although Dr. A. sat some five or six feet from her in plain view, she was unable to do so. This was an important fact in the final decision of the case.

After hearing all the testimony the Judge directed a verdict in favor of the doctor thereby clearing him of any charge of malpractice.

### Treatment of Obstructed Tear Duct

A middle-aged woman consulted a physician who specializes in eye, ear, nose, and throat work, with complaints of persistent watering of the left eye. The doctor examined the patient and found that the left tear duct was blocked. He attempted irrigation with a lachrymal syringe, but found that the fluid did not go through to the nose. He undertook to restore the function of the tear duct on two occasions by washing with a lachrymal syringe containing a solution of alkalol, but the condition of the tear duct remained unimproved. The doctor then determined to use more radical measures. He dilated the tear duct with a punctum dilator, after having anointed the instruments with an anesthetic ointment. He then passed a probe into the dilated tear duct and down into the nose under the lower turbinate. Two days later he again irrigated the duct with a solution of alkalol and found that the solution came through into the nose, proving that the passage was open. A few days later the patient returned to him, complaining of a persistent swelling under the left eye, which had developed after his last treatment.

The examination showed that a swelling had appeared under the left eye just outside the tear canal, which was moderately

hard. He ascribed the condition to cellulitis, due to the fluid having forced through the lining of the tear canal or having followed a false passage. The patient was advised to apply hot applications to the swelling. The condition, however, did not improve, and when the doctor last saw the patient professionally the swelling remained under the patient's left eye.

A malpractice action was thereafter instituted against the doctor, charging him with having been negligent in his treatment of the patient's tear duct, so as to cause the swelling beneath the eye. The case came on for trial before a judge and jury and plaintiff failed to show by any competent medical testimony that the doctor had been in any way negligent in treating the plaintiff.

At the conclusion of the testimony put in on behalf of the plaintiff the defendant's motion to dismiss the complaint was granted and judgment was entered in favor of the doctor.

#### Claimed Negligent Appendectomy

A girl about sixteen years of age was brought to a physician who had for many years specialized in surgery, with complaints of abdominal pains which had been increasing in frequency and extent for six weeks. The doctor made a manual examination of her by palpating the region of her appendix, and made a diagnosis of chronic appendicitis, for which he advised an operation. Two days later the doctor undertook to operate upon her under a general anesthesia. He made a McBurney incision through the skin separating the rectus muscle and opening the perineum. He found that the patient had a retrocecal appendix which could not be reached through the original incision. It was there-

fore necessary for him to enlarge the original incision, which he did, making a transverse incision of the rectus muscle. The appendix was then visible and was removed. The wound was closed in the usual manner and the patient was seen daily by the doctor at the hospital until her discharge.

A short time subsequently she returned to the doctor's office and he found that her wound had healed satisfactorily, but she complained about abdominal pains. The doctor was unable to find any reasons for said pains and concluded that she had eaten something that had upset her digestive organs, and advised her to that effect. The patient was later fluoroscoped and no abnormality of any kind was found.

Sometime later a malpractice action was instituted against the surgeon, in which the claim was made that the operation was improperly performed by him and that as a result she had sustained loss of flesh and had become anemic and that she had suffered headaches and a general run-down condition. She also attempted to charge him with causing her to suffer from pains of an ovarian character.

The case came on for trial before a judge and a jury and upon the trial the plaintiff attempted to say first, that the operation was unnecessary and second, that the doctor had unnecessarily extended the incision during the operation. The defendant, of course, testified that the operation itself was necessary and that because of conditions over which he had no control he found after starting the operation that it was necessary to cut the right rectus muscle for the purpose of extending the incision.

The issues in the case were submitted to the jury and they returned a verdict in favor of the defendant, thereby exonerating him of the charges of malpractice.

#### STERILIZATION GONE MAD

Medical writers in this country are amazed at the lengths to which sterilization is being carried in Germany. It seems that the authorities are now concentrating on deafness, and all deaf persons have been ordered to report for investigation.

That the hereditary health courts are taking no chances on errors of omission, is evidenced by figures that are now available. In Düsseldorf sterilization has been decided on in 200 out of 240 cases studied, in Hamburg in 761 out of 769. Other cities are proceeding at a like rate.

In the face of such unprecedented happenings, it is not to be wondered at that the medical profession in America is fighting the effort to bring medical practice under political control. How far can any guarantee of professional privacy go

under state medicine when records and reports are made the property of a lay bureaucracy?

The argument that such things could not happen in the United States cannot be accepted as final. When compulsory health insurance was introduced in Germany its bitterest opponents did not imagine that it would ever be turned to the purpose it now serves.

The only way to maintain the essential personal relationship between doctor and patient is to retain private practice. The only way to keep politics out of medicine is to keep medicine out of reach of politics. Compulsory health insurance subordinates healing to bureaucracy and places physicians and sick alike at the mercy of politicians.



# Books

## BOOKS RECEIVED

[Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from this column will be made for review, as dictated by their merits, or in the interests of our readers.]

**Diseases Peculiar to Civilized Man—Clinical Management and Surgical Treatment.** By George Crile, M.D. Octavo, of 427 pages, illustrated. New York, The Macmillan Company, 1934. Cloth, \$5.00.

**Mental Deficiency Nursing.**—By O. P. Napier Pearn. 16mo of 281 pages. Baltimore, William Wood & Company, 1934. Cloth, \$2.00.

**Vital Cardiology—A New Outlook on the Prevention of Heart Failure.** By Bruce Williamson, M.D. Octavo of 344 pages. Baltimore, William Wood & Company, 1934. Cloth, \$5.00.

**Essays on Chronic and Familial Syphilis.**—By Griffith Evans. Octavo of 91 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$3.00.

**Parasitism and Disease.**—By Theobald Smith. Octavo of 196 pages. Princeton, N. J., Princeton University Press, 1934. Cloth, \$2.00.

**Applied Physiology.**—By Samson Wright, M.D. Fifth Edition. Octavo of 604 pages, illustrated. New York, Oxford University Press, 1934. Cloth, \$5.50.

**A Textbook of the Practice of Medicine.**—By Various Authors. Edited by Frederick W. Price, M.D. Fourth Edition. Octavo of 1995 pages. New York, Oxford University Press, 1933. Cloth, \$11.50.

**Surgery of a General Practice.**—By Arthur E. Hertzler, M.D. and Victor E. Chesky, M.D. Octavo of 602 pages, illustrated. St. Louis, C. V. Mosby Company, 1934. Cloth, \$10.00.

**Spinal Anesthesia—Technic and Clinical Application.** By George R. Vohrs, M.D. Octavo of 269 pages, illustrated. St. Louis, C. V. Mosby Company, 1934. Cloth, \$5.50.

**Tuberculosis in the Child and the Adult.**—By Francis M. Poettenger, M.D. Octavo of 611 pages, illustrated. St. Louis, C. V. Mosby Company, 1934. Cloth, \$8.50.

**Industrial Toxicology.**—By Alice Hamilton, M.D. 16mo of 352 pages. With subject index. New York, Harper & Brothers, 1934. Cloth, \$3.00.

**Midwifery for Nurses.**—By Henry R. Andrews, M.D. and Victor Lack, M.B. Seventh Edition. 12mo of 268 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$2.50.

**Nephritis and Allied Diseases.—Their Pathogeny and Treatment.** By Robert Platt, M.D. Octavo of 166 pages. New York, Oxford University Press, 1934.

**Manual of the Diseases of the Eye.—For Students and General Practitioners.** By Charles H. May, M.D. Fourteenth Edition. Octavo of 496 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$4.00.

**That Heart of Yours.**—By S. Calvin Smith, M.D. Octavo of 212 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1934. Cloth, \$2.00.

**A Primer for Diabetic Patients.**—By Russell M. Wilder, M.D. Fifth Edition. 12mo of 172 pages, illustrated. Philadelphia, W. B. Saunders Company, 1934. Cloth, \$1.75.

**The Surgical Clinics of North America.**—Vol. 14. No. 3, June 1934. (Mayo Clinic Number.) Published every other month by the W. B. Saunders Company, Philadelphia and London. Per Clinic Year (6 issues) Cloth, \$16.00. Paper, \$12.50.

**A Short History of Some Common Diseases.**—By Divers Authors. Edited by W. R. Best. Octavo of 211 pages. New York and London, Oxford University Press, 1934. Cloth, \$3.50.

**A Compend of Diseases of the Skin.**—By Jay F. Schamberg, M.D. and Carroll S. Wright, M.D. Ninth Edition. 12mo of 331 pages, illustrated. Philadelphia, P. Blakiston's Son & Co. [c. 1934]. Cloth, \$2.00.

**The Spastic Child.**—By Marguerite K. Tischel. 12mo of 97 pages, illustrated. St. Louis, C. V. Mosby Company, 1934. Cloth, \$1.50.

**The Laboratory Notebook Method in Teaching Physician Diagnosis and Clinical History Recording.**—By Logan Clendinning, M.D. Octavo of 71 pages. St. Louis, C. V. Mosby Company, 1934. Paper, 50c.

## BOOKS REVIEWED

**Practical Methods in Biochemistry.**—By Frederick C. Koch. Octavo of 282 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$2.25.

The author presents a manual of biochemistry which is primarily intended as a practical companion to Matthews' textbook. However, he has incorporated a matter in order to with the practical with the chemistry of digestion and urine. The practical analysis are based on a very valuable preparation of all instructions for use of colorimeters.

W. S. COLLENS

**Hypertension and Nephritis.**—By Arthur M. Fishberg, M.D. Third Edition. Octavo of 663 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$6.50.

The appearance of the first edition of this work impressed everyone with the thoroughness, accuracy, and care of the presentation of this difficult subject.

One cannot realize the completeness of this study without several careful reviews of the volume. Every phase of kidney dysfunction has been considered in a scholarly manner. The book is a masterpiece and the necessity for a third edition in a short time proves its value.

No one who wishes to know of kidney disease and allied conditions can afford to miss this new edition which brings to date recent progress in the care of nephritic conditions and which includes obscure states not mentioned in the previous editions.

HENRY M. MOSES

**Aids to Qualitative Inorganic Analysis.**—By R. G. Austin. 16mo of 204 pages. Baltimore, William Wood & Company, 1933. Cloth, \$1.50.

This little book has been written to assist medical students in the analysis of simple inorganic substances. The chemical reactions are clearly defined. And their

study will give the student a good knowledge of chemistry in general. The text is well arranged and makes for easy reading. At the end of the book a number of inorganic substances of importance in medicine and pharmacy have been placed.

EDWARD H. NIDISH

**Recent Advances in Psychiatry.**—By Henry Devine, M.D. Second Edition. Octavo of 364 pages. Philadelphia, P. Blakiston's Son & Co., 1933. Cloth, \$4.00.

The author has revised his classic first edition, thereby making it more true to the title, although there is included much material that can scarcely be called recent advances. These inclusions, however, enable the volume to be compared somewhat to an advanced textbook without rudimentary material. It is less a critical survey of recent literature and is more of a discursive book for graduate and advanced work.

Three new chapters on recent developments in material in general has style of presentation recommends itself not alone to graduates and advanced workers, but to sufficiently interested students and general practitioners.

IRVING M. DERBY

**New and Nonofficial Remedies, 1934,** containing descriptions of the articles which stood accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1934. 12mo of 510 pages. Chicago, American Medical Association [c. 1934]. Cloth, \$1.50.

**New and Nonofficial Remedies, 1934,** has the same pleasing format and helpful mechanism that has characterized it in past years. The enrichment of the index, which started a few years ago, is continued and its value even increased by some desirable simplification of cross references.

The Council has made the usual careful revision of the book. The general article Lactic Acid Producing Organisms and Preparations has been practically rewritten. The articles on arsenic preparations, chinoinon,

vioform, ethylhydrocupreine (with deletion of references to optochin base), typhoid vaccine, and others have been revised thoroughly. Comparison with last year's volume will show that revisions of more or less importance occur in many other chapters.

Among the preparations newly included in this volume are: aminophylline, neo-iopax, benzedrine, serums containing type II pneumococcus antibodies, autolyzed liver concentrate and extralin, metycaine, and sodium morrhuate.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1933. 12mo. of 188 pages. Chicago, American Medical Association, 1933. Cloth, \$1.00.

The main bulk of the volume, which is, incidentally, considerably increased over that of recent annual volumes, is taken up with reports on products which the Council has found unacceptable for inclusion in New and Nonofficial Remedies.

Die intrakutane Kaninchenmethode zur Auswertung von Diphtherie-Toxin und Antitoxin.—By Claus Jensen. Octavo of 211 pages, illustrated. Copenhagen, Levin & Munksgaard, 1933. (Acta Pathologica et Microbiologica Scandinavica, Supplement XIV.)

The author describes the use of rabbits in the determination of the diphtheria toxin and antitoxin as an aid or replacement of the Ehrlich method. The different methods of standardization of the units of toxin and antitoxin and their practical application are fully described. The work is divided into two parts. The first part deals with the history of the technique and the various units used by different workers. The second part deals with the intracutaneous rabbit method and describes the clinical appearance and histology of the intracutaneous reaction of the diphtheria toxin, as well as the effect of temperature, dilution, and individual variations in the use of toxin and antitoxin. There is also a detailed description of the practical application of the method.

EDWARD H. NIDISH

La Lutte Internationale Contre le Cancer.—By Dr. Jacques Baudouin. Octavo of 947 pages, illustrated. Paris, Norbert Maloine, 1933. Paper Fr. 135.

As the title indicates, this book is a very detailed survey of the facilities, clinical and experimental as well as social, comprised in every country in the world in the anti-cancer campaign. Furthermore an account is given of the inception and history of the fight against, and the study of, the cancer problem, so that in fact the volume is a veritable encyclopedia of information regarding the world's resources engaged in this problem. The appendix contains a complete list of special hospitals, or wards of general hospitals or clinical departments of experimental institutes devoted to the study and treatment of cancer throughout the world, including such information as personnel, number of beds, amount of radium on hand, strength of x-ray apparatus, etc.—a reference work extremely useful for consultation.

PHILIP FRANK

Aids to Neurology.—By E. A. Blake Pritchard, M.D. 16mo. of 376 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$2.00.

This vest-pocket edition is an attempt to summarize the clinical conditions that most commonly result from diseases of the nervous system. It is intended for the use of the junior medical students. Separate chapters are devoted to symptomatology, the peripheral nervous system, spinal cord, brain, and the sympathetic nervous system.

It is quite a good book and one that will find favor with the busy medical student. The author has not intended it to be more than an aid to the study of neurology, and it therefore can serve only as a supplement to the more complete textbooks on neurology. When properly used, the book will serve a good purpose, and is therefore recommended, as its title implies, as an aid to neurology.

IRVING J. SANDS

Das Wunder der Heilung durch Eigenes Blut.—By Dr. Ludwig Sternheim. Octavo of 64 pages. Bern, Switzerland, Hans Huber [c. 1933]. Paper, Fr. 3.50.

In this pamphlet the author discusses the healing powers of one's own blood. He describes the condition of the tissues in health and disease, cell irritability, and the defense mechanism against harmful influences. He also discusses the artificial stimulation of immunity in subacute and chronic diseases, and the use of one's own blood for such purposes. The technique of this use of blood is described very clearly, and the various diseases that were benefited by its use are enumerated.

EDWARD H. NIDISH

Practical Medicine Series.—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Series 1933, Chicago. The 1933 Year Book of Neurology and Psychiatry. Neurology, edited by Peter Bassoe, M.D. Psychiatry, edited by Franklin G. Ebaugh, M.D. 12mo. of 470 pages, illustrated. Cloth, \$2.25.

This is the yearly volume welcomed as a critical survey relating to the fields of neurology and psychiatry. The same editors continue with their expertly selected material, consecutively arranged and not too briefly elaborated. Editorial comments distributed throughout the arrangement are constructive and clear.

The quoted statement that the volume and quality of neurological literature has not been affected by the depression applies to the psychiatric division as well. The volume is produced for practitioners familiar with physical and mental disease and is an excellent summary of references for those wishing the later views in neurology and psychiatry.

IRVING M. DERBY

Metabolic Diseases and Their Treatment.—By Dr. Erich Grafe. Octavo of 551 pages, illus. Phila., Lea & Febiger, 1933. Cloth, \$6.50.

A detailed discussion is not possible in a brief review. In general, the author's viewpoint is in accord with that usual in this country. However, there are many matters of detail in which this is not the case, and his views are clearly and forcibly expressed. This adds especial interest for the informed and careful reader. The material is clearly and thoughtfully presented. The translation is in fluent and idiomatic English. Errors are few.

It is a real pleasure to the reviewer to recommend a volume such as this.

CARL H. GREENE

Applied Pharmacology.—By A. J. Clark, M.D. Fifth Edition. Octavo of 632 pages, illustrated. Philadelphia, P. Blakiston's Son & Co., 1933. Cloth, \$5.00.

In the preface to the first edition of this textbook, the author stated that he had endeavored to give an account of the direct scientific evidence for the therapeutic action of the more important drugs, and to demonstrate the importance of this knowledge in the clinical application of drugs. This is an ideal goal, but the field covered is so broad, that much relevant detail has of necessity been sacrificed, in order to keep the presentation between the covers of a single volume. As such, it will not supplant the present standard treatises on either pharmacology or therapeutics.

The material is interestingly and readably presented. The discussion of individual disease syndromes is one of the reasons for the popularity of the book. The appearance of this, the fifth edition, is a measure of the latter.

CARL H. GREENE

The Great Enigma.—A New View on the Outlook of Life. By Hugo H. Schauninsland, Ph.D. Translated from the German by Walter H. Schauninsland, Ph.D. 12 mo. of 90 pages. New York, E. P. Dutton & Company, 1933. Cloth, \$1.25.

In this little book the author aims to show that we are still very much in the dark regarding ourselves, in spite of wonderful scientific achievements. He reflects in a philosophical vein on the communal habits and instincts of lower animals, and minimizes man's attempts to supplant Mother Nature with flimsy laws and principles.

The physician reader will hardly sympathize with such a helpless attitude. We physicians are realists, and it is contrary to medical thought to be powerless in the face of uncontrollable bodily destruction. A remedy, however useless it be, is better than none.

This book is a simple confession of Man's helplessness on this earth, and yet is far more penetrating than many of the so-called enlightening technical treatises on scientific progress.

EMANUEL KRIMSKY

A Handbook of Psychiatry.—By John H. Ewen. 12mo. of 267 pages. Baltimore, William Wood & Company, 1934. Cloth, \$4.75.

This is an attempt to present in synoptical form the accepted tenets of modern psychiatry. It is made up of well-outlined, highly condensed material. As such it should make a rapid reference work, ideal for the student preparing for his examinations or the lecturer, hastily reviewing his material.

It is divided into six sections, consisting of an introduction, psychoses, psychoneuroses, mental deficiency, legal relations of mental disorder, and an appendix.

The prospective reader will find it to be very complete, virtually every phase of modern psychiatry has been ably epitomized.

HAROLD R. MERWARTH

## NEUROLOGICAL ASPECTS AND TREATMENT OF BIRTH INJURIES

FARL R. CARLSON, M.D.

*Director, Department of Education of the Buth Injured, Neurological Institute New York City*

The birth injury group embraces a wide variety of conditions. Such conditions are frequently referred to as spastic paralysis. This is an unfortunate misnomer, since an intracranial birth injury can give rise to almost any kind of neurological syndrome. There may be spasticity as well as flaccidity, hypotonic as well as hypertonic muscles ataxic as well as athetoid states, all depending upon the location and the extent of the injury.

If the injury involves trophic centers in the brain, there will be corresponding changes in the muscle contour. Just because a muscle group is small, it does not necessarily follow that we are dealing with an atrophy of disuse. The most active muscle groups will remain small, in spite of activity, if the lesion involves trophic centers which limit the nutrition to the muscle. On the other hand, if the trophic changes are such as to cause an excessive nutrition, the reverse will hold true in spite of limited muscular activity.

The essential factor to be determined in training these cases is whether the disease is progressive and whether any degree of mentality is present. Evidence that the disease is progressive places it beyond the reach of effective training.

Since cases of encephalitis and the heredodegenerative types of diseases, which are not amenable to training, can also simulate the clinical picture arising from intracranial trauma, it is obvious that, if these progressive factors be not carefully

sive ly training, the outlook for the treatment of the birth injured is far from encouraging. Developmental defects have often been wrongly diagnosed as birth injuries and in many instances, it is impossible to make the distinction. In several cases we have

seen, the patients have not only shown a history of having been born cyanosed and asphyxiated and with the aid of forceps, but, in addition, the presence of branchial clefts, cleft palate, and other stigmata of degeneration have made it strongly suggestive that a developmental defect might predispose to a birth injury. In this connection, the case of identical twins should be mentioned, in whom the encephalogram revealed identical lesions. There was also a history of dystocia. Had only one twin survived, the conclusion would have been that the condition resulted from trauma, but the evidence of identical lesions, which were mirror images of each other, made any other cause than failure of development highly improbable. However, in the blastophoric anomalies we have seen, the intelligence has suffered far beyond the stage which will respond to treatment.

When it comes to evaluating the mental resources of these patients, we find an equally wide range of differences. An intracranial birth injury can give rise to such extremes as idiocy, on the one hand, with little or no muscular difficulties, to cases of purely motor handicaps, on the other hand, with little or no mental disturbances. We must therefore be very careful before giving any appraisal of the latent mental capacities of the birth injured. The grimaces and drooling frequently seen in these patients have not infrequently led to their being mistaken for idiots or considered feeble minded, whereas such a condition should no more be a criterion of mental deficiency than is a disturbance limited to a leg or foot muscle. The mentality is therefore often extremely difficult to evaluate, especially where the physical affliction is severe and far out of proportion to the intellectual ability.

We cannot rely too much on intelligence

tests, since the majority of them require the use of muscles, over which the patient may have little or no control during the test. As an arbitrary standard, however, such tests are useful in serving as a starting point. If subsequent tests after a period of training reveal higher rating, we know that the patient is making progress.

Aside from the purely physical affliction of the muscular system, we must take into consideration the possibility of special disabilities such as speech, reading, hearing and spelling. We have found that almost 15 per cent of our cases have definite impairment of hearing, sufficiently severe to interfere with their schooling. In many such cases, the mother denies that the child has any trouble in this respect, whereas, carefully worked out otographic tests will reveal an appreciable loss in hearing. Obviously, if the child is deaf to certain tones, speech is going to suffer.

The question of handedness must be particularly investigated before outlining any educational régime. "Writing," according to Dr. Orton, "like other fractions of the language faculty, is intimately related to the problem of unilateral cerebral dominance, since it is frequently lost in the adult as a result of destructive lesions of the dominant hemisphere and is not disturbed by lesions of comparable extent and locus in the subjugate hemisphere." According to him, "failure to acquire the usual cerebral pattern of the adult, *i.e.*, unilateral dominance, lies at the bottom of the selective retardation in learning to read, occurring in children who are otherwise able."

The frequency with which we are confronted with these special disabilities has resulted in our insisting upon a complete analysis of each patient before he is allowed to continue with his schooling. Then, if any special handicap is discovered, an educational program in accordance is outlined. Instead of having a child, for instance, with a reading disability forced to carry the usual routine curriculum, special instructions are given. The child with the hearing defect must be handled quite differently. The simplest solution is the establishment of special schools for which the proper individuals can be carefully selected, only after complete examination and then a program outlined whereby both physical and intellectual development can be simultaneously controlled.

The behavior of the birth injured must be thoroughly investi-

gated before attempting any treatment. If the lesion involves thalamic centers, where we get conditions of forced laughing and crying, such a situation is going to be more difficult to handle than one that is primarily of psychogenic origin. So far we have had very little success in coping with the disturbances due to extensive thalamic lesions. The psychogenic problems, however, can often be handled in much the same way as the child who, though physically and mentally normal, has become a behavior problem.

From what has been said it is evident that the possibilities or limitations of the birth injured cannot be determined by merely testing the reflexes of the muscles, as is so frequently done. The thought processes, it must not be forgotten, are also reflex activities and these may be as hyperactive as the knee jerks. It is, therefore, just as important to control the reflexes which are running riot in the thought processes as it is to control the reflexes of the muscles. Merely a set of exercises is, therefore, of no avail unless they are conducted in conjunction with an academic program.

Unless there has been a gross insult to the cortical cells, when idiocy, without apparent motor disturbance, may occur, the birth injured can be considered essentially as a hyperkinetic type of individual. Since the injury is generally a diffuse one, we seldom find a pure type of disturbance such as we see in the case of a tumor, but rather combinations of athetosis with recurrent spasticity or a striocerebellar type of disorder. Regardless of the type of movement which predominates, there is usually a tremendous amount of overflow of nerve energy on attempted voluntary movement. In the same individual the reactions to this overflow on some occasions may not be apparent, or they may be limited to only one or two muscle groups, while, at other times, the entire body musculature is involved.

We must not forget that, in the normal new-born infant, the movements are also incoordinated and appear to result from irradiation of impulses throughout the body. Studies in normal child development show that these undifferentiated responses are readily adaptive to environmental conditions. These studies have proved most valuable in assisting us to help the infant in forming desirable associations and becoming better adapted to his continually changing environment.

Why should not similar studies be made on the birth injured? Granted that the progress of the normal child is more spontaneous and that no steps need be taken to teach it to sit or stand, the irritability of nervous tissue is nevertheless a relative thing and the proper type of conditioning is just as important in one case as in another. Granted also that the range of differences in the behavior of the birth injured is greater than with the normal, progress in both instances depends upon the fate of the overflow of nerve energy.

The problem, then, is to find adequate channels of expression for the excessive energy which interferes with the birth injured's activities. Since man is an energy producing machine, it is important, not only to relieve the tension of the birth injured's muscles through proper relaxing exercises, but, after the tension has been relieved it is essential to redirect that energy into other channels, especially along academic lines, in order that the patient may become more objective in his thinking.

At the Neurological Institute, the birth injured cases, after having been thoroughly investigated, are placed in a special school where mental and muscle training begin and proceed simultaneously, with a minimum amount of distraction from a definite daily routine.

One hour daily is allotted to muscle training, followed by a period of rest and during the remainder of the waking day, the patients are kept occupied by studies and such games as tend toward enhancing muscular expression, as well as to make the patient objective in his thinking. Care is exercised in the selection of patients, cases of marked mental deterioration and those showing progressive disturbances are excluded. A close contact with the home is kept to make certain that the parents are cooperating in the program which, in the main, tends to make the child self-attendant. This is necessary to augment, rather than to distract from the influences of this school. Emphasis is placed on the fact that, when the child is ready, he should be transferred to a normal school environment.

With respect to the specific types of exercises, it is very difficult to lay down any set rules, since these exercises must be adapted to each individual case. The primary aim of the exercises is to teach the patients to make an active movement with the minimum amount of muscular effort. At the outset, it must be remem-

bered that we are working with patients who have never been able to perform a normal coordinated movement. This is different from the situation of the patient who is born with normal faculties and later in life sustains a paralysis. With the latter, training is a matter of reeducation. In the case of the birth injured, however, training is not reeducation but an endeavor to initiate a pattern for normal coordinated movement out of a pattern complex of massive muscular responses which have never been differentiated. If the patient is an infant, these mass action patterns can be differentiated into segmental movements by passively moving the infant's arm to the rhythm of a lullaby. In time, the infant will learn to associate the action of moving the arm with the singing of the lullaby so that, when the song is heard subsequently by the infant, he will actively move his arm. After a pattern for segmental muscular activity has once been established, further differentiation becomes less difficult. In other words, the baby who responds by extending all four extremities simultaneously, when a toy is presented to him must be taught to use only the muscles necessary for the act of stretching out the hand and no others.

In the case of older children training is also directed toward breaking up mass action patterns and this becomes easier as the child learns to cooperate. Such factors as anxiety, fear, and self-consciousness augment the adventitious movements and, therefore, it is important to eliminate the emotional element from the muscular act as much as possible. This is especially true when the patient presents much atelectasis. In such cases, instead of having the patient concentrate on the exercises themselves, the patient's attention should be focused on something irrelevant to the situation when doing the exercises. Slow, rhythmic music will often obviate this difficulty, or anything which will tend to reduce the sensorial input to a minimum will be helpful.

In cerebellar disorders, where we rely a great deal on the optic pathways in training, it is important to correlate the visual acuity with the muscular act. The ability to walk in such cases is often facilitated if the patient will look where he walks. Focusing on an object toward which he is going is helpful in maintaining the head erect, which is likewise important in correcting any vestibular difficulties. In this connection, it should be emphasized that

the ability to walk and maintain balance will be greatly assisted through the correction of visual difficulties such as a strabismus, either by surgery or by the use of lenses.

A calm and quiet atmosphere is essential for encouraging relaxation. The physical trainer should be a person with a temperament and personality that is conducive to relaxation. Before the actual exercises are begun, there should be an initial period of relaxation lasting for about five minutes. The active exercises should be carried out with the least possible amount of overflow, that is, with just as little effort as it takes to produce a free and easy movement. It should commence with slow, coordinated, rhythmic forms of exercise, beginning with the big groups of muscles, such as the proximal joints, the shoulder and the hip, with the aim of gradually working in the knee and elbow and finally the hands and feet. Sometimes it is necessary, with small children to passively assist them with these exercises, until they are able to perform them themselves.

The control of the big body muscles should be acquired first and then the smaller groups, etc. Placement exercises such as walking on lines, putting fingers on dots, and placing pictures on blackboards is helpful after the control of the larger muscle groups has been established. Walking before the mirror is also an aid. If passive stretching of a muscle group is necessary, it should only be done when the antagonistic groups have become relaxed. Treatment in water, while it is conducive to relaxation, because of the elimination of the force of gravity, is, nevertheless, not as effective as in the treatment of poliomyelitis conditions. It seems that, in the case of the birth injured, the ability to relax does not carry over as well in water treatments as when the exercises are given on the table.

It is better to let the birth injured child practice the thing that he is to learn, making the erroneous or unessential movements in first attempts and later eliminating them, than to restrict his activity to simpler movements in the process, with the expectation that the ability so gained will immediately carry over into the more complicated coordination. In other words, it would be like putting the cart before the horse, if we attempted to teach a child to play the piano or to learn to write, if the grosser groups of muscles necessary to control the hand had not been treated first. The point of not complicating the per-

formance asked of the birth injured, by setting up too many sensory stimuli to which he must attend simultaneously, is of great importance. A little guidance toward relaxation before attention is focused on the more complicated acts is an efficient method of training.

Surgical procedures such as the Hunter and Royal operation on the sympathetic nervous system have been of little value, according to the consensus of opinion. Muscle transplants, nerve sutures, tenotomies, and alcoholic nerve injections, should be resorted to only after a thorough trial has been given in muscle training. Such procedures aid in muscle training but should not be undertaken unless they can be followed by a thorough program of corrective exercises.

With respect to medical treatment such as sedatives like luminal, bromides, etc., these are not to be advocated except in severe cases and preferably limited to those with convulsive seizures. A preparation of luminal, thyroid, and calcium is sometimes valuable in combating convulsions. In such cases an encephalogram should be made to reveal defects which might be treated surgically. Alcoholic beverages, while they are exceedingly valuable in temporarily eliminating the adventitious movements during their effect, should not be resorted to because of their habit-forming tendency. Any substance which tends to depress the mental activity makes the patient less responsive to an educational program which is so important in obtaining results. A cup of coffee will often make the patient more responsive to his studies and exercises than will a sedative. Glycine has been beneficial in many of our cases.

Speech training should be attempted only after a thorough analysis of the speech situation has been made. If the encephalogram reveals an injury involving the operculum surrounding Broca's speech area, we cannot hope to help the difficulty. If audiometer tests reveal a deficiency of hearing, exercises to increase the acuity of that faculty must be prescribed. Tests should also be made to determine the handedness of the individual so as to encourage the use of the hand that is most likely to establish a unilateral cerebral dominance. The latter is often aided by combining the spoken word and writing simultaneously, preferably with the use of blackboard so as to enable the patient to write in large words as he attempts to speak the word which he is writing. The movements of the hand

will also take care of some of the excessive overflow of nervous energy which interferes with speech. Tongue placement exercises in front of mirrors are also useful. Speech, however, is a very intricate muscular process and, since, in the case of the birth injured, its disturbance is intimately tied up with the general condition, we cannot hope for much improvement in this respect until the patient has learned to control the larger groups of muscles or has acquired a general improvement.

#### SUMMARY

The birth injury group embraces a wide variety of conditions and, although among them are the more serious idiotic cases in which prognosis is hopeless and for which there is no effective treatment, we also have a large number of cases laboring under purely motor handicaps, with little or no mental disturbance and in which there is a possibility of obtaining extremely good results if proper treatment is instituted at an early age. The essential factor to be determined is whether the disease is progressive and whether any degree of mentality is present. Evidence that the disease is progressive places the case beyond the reach of effective training; a profound degree of mental defectiveness excludes the case because there is no undamaged residue with which to work. Care must be exercised in differentiating between a special disability and a deficiency. The latter is not amenable to treatment, whereas a special disability, such as in speech and in reading, can often be greatly benefited under proper guidance.

Deprived of early training, the patient is not only delayed in speech, locomotion, and performance of skilled acts in general, but the longer the delay, the slower will be the progress, because of the faulty motion habits to be unlearned. In the normal, as well as with the birth injured, the capacity for skilled and accurate muscular efforts depends upon his memory of them and upon his power of recalling them and evoking them again. Just as writing, speaking, and certain gestures are conventional modalities of expression, gained through the proper training of the normal individual, so the muscular movements of the birth injured come to represent unconventional modalities of expression, unless proper conditioning is instituted when the child's associative system is largely unformed. The purpose of this paper is, therefore, to emphasize that the problem of the birth injured is not merely an orthopedic one, it is an educa-

tional problem in itself which, for its solution, demands the closest cooperation between physician, teacher, and parent.

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#### ABSTRACT OF DISCUSSION

DR. WALTER O. KLINGMAN. For the past two and a half years it has been my privilege and pleasure to have been associated with Dr. Carlson as Medical Advisor to the Department for the Re-education of the Birth Injured at the Neurological Institute of New York. During that time we have seen hundreds of children suffering from various types of paralysis, most of which were palsies in consequence of birth injuries and many of them not. From this large group of infantile palsies we endeavored to select those which we felt reasonably certain resulted from birth injury although in many instances this is difficult to establish absolutely. This selected group of cases was then used for treatment and study and excludes such cases as are caused by known developmental defects, aphasia and ageu-  
ses, amaurotic family idiocy, encephalitis, syphilis, etc.

In studying the material we have been impressed with certain features which we wish to call to your attention. When one speaks or hears of birth injuries one immediately thinks of, or visualizes, the classical clinical picture of Little's disease or spastic paraplegia, largely, probably, because Little was one of the earliest to associate the condition with birth injury. Our experience has been that the clear cut, purely paraplegic cases were not the common or usual type encountered but that the clinical picture was of a greatly varied type. Fortunately we have been able to obtain a certain amount of pathological material from the Sloan Hospital Babies Hospital, and Neurological Institute, to demonstrate the varied lesions that are encountered in birth injuries. Except for the brains of infants that die immediately after or at birth, material for study is extremely difficult to obtain so that our study is not as complete as we wish to have it and expect to have it. If one recalls briefly the various nerve centers and tracts involved in the successful production of movement it is easy to understand why we find such varying pictures with all degrees of spasticity, ataxia, athetosis, choreic features, evidence of thalamic involvement anterior horn cell damage, hypothalamic and trophic disorders.

When one considers these injuries and the clinical conditions that cause them one thinks at once of difficult and forced labors. It is quite needless here to mention the various difficulties and conditions contributing to forced or difficult labor but there are certain obstetrical conditions deserving of mention aside from prolonged difficult labor and instrumental delivery. Version and breech delivery, as Crothers pointed out is unphysiological and dangerous because of traction and a most dangerous procedure from the standpoint of the central nervous system. Forty five per cent of the cases which we have studied gave a history of instrumental delivery and in 41 per cent there was definite evidence of trauma at the time of delivery. Brachial plexus and spinal cord injuries in most cases are obviously due to technical difficulties encountered in breech deliveries or in impaction of the shoulders behind the symphysis. Aside from the difficulties encountered in labor and at delivery, another important factor to be considered is immaturity of the infant. In our study the percentage of immature infants runs between 18 and 20 per cent. The term 'inma-

ture" meaning here any infant who weighed less than 2,500 gm. at birth irrespective of the length of duration of the pregnancy. In this respect we feel that because of immaturity of the cerebrovascular and meningovascular system, the capillary and vascular bed in most instances is not sufficiently developed to withstand the trauma associated with uterine contractions and passage through the birth canal.

The early diagnosis of birth injuries is not always simple. In obtaining our histories we have been impressed with certain fairly constant features that are present. They are immaturity, increased somnolence, increased crying, asphyxia, apneic attacks, irregular breathing, failure to suckle, rigidity, opisthotonos, slow rhythmical adduction and abduction, persistent singultus, yawning, and frequent vomiting. But the outstanding symptoms are, however, convulsions and localized twitchings and difficulty in suckling; 61 per cent of the cases gave a history of difficulty in suckling and 26 per cent of the cases gave a history of convulsions or muscular twitchings.

All of the signs and symptoms just mentioned vary greatly and one finds all degrees of them present. About half of the infants do not show other symptoms until the latter part of the first year when convulsions and late development of the static functions are noticed and then gradually the varying pictures of spasticity, athetosis, ataxia, etc., as myelinization in the nervous system becomes complete.

Much has been written and said in explanation of the various disturbances in movement that one sees in cases of birth injury, but if we recall the underlying pathology and the many nerve centers and pathways involved, we can visualize almost any kind of clinical manifestation; this has been exactly our experience in examining hundreds of these children. One can see the complexity of the nervous mechanism which underlies the functions of posture and movement in these children and one can easily see how movement and posture may be seriously interfered with. Any lesion in this complex network of neural connections will upset movement in some way or other, and the effect of injury of the main centers and tracts of the neuronic arcs on the functions of the peripheral arc, on the movement of the muscles, the posture, and the reflexes, is the purpose, of course, of our clinical examination and should precede any attempts at reeducation. Considerable speculation has been made as to how much the higher cortical centers enter into the various disturbances of motion and posture, whether the lesions are cortical or subcortical, etc. Observations on many of the children under various circumstances has shown the striking effects which such factors as concentration, fear, attention, and self-consciousness play in controlling movements and posture. We likewise have observed the effects that ether and alcohol has on them. Recently we have had occasion to observe experimentally and also clinically certain features of this, which warrant comment but also considerable more investigation. The question of localization is still far from being answered.

The severity of the lesions or the diagnosis of the condition in doubtful cases can be estimated frequently by the use of the encephalogram and if one could examine all cases ideally, one should insist upon encephalogram study in each instance especially since Dyke and Davidoff have worked out so carefully the localization of cerebral structures by the use of the encephalogram.

Aside from the purely muscular reeducation of the birth injured, treatment must be extended into more than just this field. As yet many of these other fields are still in the process of investigation by us, but such special disabilities as speech, hearing, vision, reading, writing, and intellectual training in general are presenting themselves. We have been particularly fortunate to have the help of such investigators as Chesher and Dozier, of Orton's research staff in language and other disabilities in studying these problems for us. Our feeling as a result of a good many of these studies is that about 15 per cent of the cases have a hearing disability. The majority of the speech disturbances are those of expressional speech which is a part of the general motor disability. Special disabilities in reading, writing, stuttering, and stammering are probably not any more frequent in the birth injuries than in other children, implying that they would have the disability whether they had the birth injury or not. Nevertheless from the educational standpoint we have found it of tremendous help in having the special disability analysis made in outlining the school program.

Probably one of our greatest problems, once a child has been accepted for treatment, has been that of helping the afflicted child to adjust himself to his environment and the conditions of life as he will meet them. Behavior and psychiatric problems are present in practically every case and bear tremendous importance in the success one has or does not have in the treatment. The social and environmental status requires careful study and thought. The personality make-up and inherent constitutional factors all play important rôles in these children.

In many of our older children and adolescents we have found a high percentage of actual psychotic or potential psychotic states which have been built up largely by the handicaps and inability to adjust to those handicaps.

There is another group about which a few words should be said as they require special care and treatment: the group in which there has evidently been injury to the hypothalamic region with subsequent endocrine and various types of metabolic disturbances.

To us who are interested in the birth injury problem, there are still many unsolved problems requiring further investigative work before we can express our findings about them. The muscular nutrition problems, creatinine metabolism studies, and other biochemical studies, the factors entering into spasticity, the relationship of CO<sub>2</sub> fluctuations to spasticity in the respiratory irregularities and numerous other problems are being studied by us now in the hopes of adding still more help in the care of the birth injured.

DR. IRVING J. SANDS: My necropsy material has enabled me to conclude that there are several places of predilection in birth injuries in the brain. The most common injury is that of a tentorial tear, and therefore the cerebellum or its peduncles are injured. The next most common site of injury is the periventricular areas. Lastly, the pons is the seat of injury. Ventricular hemorrhages do occur, but relatively infrequently. Fortunately, the frontal lobes and the anterior half of the brain in general are usually spared. Therefore the intelligence of these patients is usually good. What can be done in the line of therapy is well illustrated by the two excellent papers which Dr. Carlson and Dr. Klingman presented this morning.



## THE TREATMENT OF SINUS THROMBOSIS

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The scope of this paper will be confined to infections of the lateral and sigmoid sinus secondary to suppuration in the middle ear and mastoid process. The treatment of sinus thrombosis is essentially surgical. While cases of sinus thrombosis can and do get well without operation, no thinking and intelligent practitioner can conscientiously advocate any treatment that does not include some surgical procedure.

The objective of the treatment of sinus thrombosis is the removal, as far as possible, of the affected focus in the sinus and the prevention of the passage of pathogenic organisms into the general blood stream. It is the conception of the writer that the disease in the sinus is a progressive lesion that successive waves or crops of microorganisms are thrown into the blood stream. These are taken care of by the general resistance of the patient and an apparent improvement occurs until another wave is thrown into the blood stream from the original focus. If this cycle is allowed to go untreated, the resistance of the patient is overcome and a fatal issue ensues. In the cases that heal spontaneously—and these are rare—the thrombus in the sinus becomes organized and microorganisms are destroyed by the various resisting agencies that reside in the body of the individual.

Operation in sinus thrombosis can be divided into two main parts: (1) operation on the sinus itself, (2) operation on the jugular vein. While, for purposes of convenience the operation on the sinus itself is first discussed it by no means follows that in every case this procedure precedes the measures devoted to the treatment of the jugular vein.

The operation on the sinus itself has as its aim the eradication as far as possible of the original focus of infection. It may be stated at the outset that no surgeon imagines that the original focus in the sinus is completely eradicated by any operative procedure. However, it is true that the major portion is eliminated and whatever peripheral or residual infection remains is disposed of by the resisting forces of the body. It is understood that before the operation on the sinus is performed the

mastoid cavity has been everted either in the simple or radical operation. The author does not know of anyone whose practice it is to operate upon the sinus and leave the focus in the mastoid untouched. In brief, the operation on the sinus consists in removing the sinus plate within the cavity of the mastoid below as far toward the jugular bulb as is possible without endangering the nerve and posteriorly as far backward as is necessary to expose the clot within the sinus or to expose the healthy sinus wall. As a rule the torcular herophili are the posterior limit of this exposure.

It has seemed to the author that in the last few years fewer clots in the sinus have been encountered than previously. It has been his practice as a routine to expose enough sinus to make it possible to compress with iodoform plugs the posterior and inferior limits of the exposed sinus and still have enough exposed sinus between the plugs so that it can be carefully and deliberately incised and clearly demonstrated whether the posterior or the inferior end is free of clot.

In the writer's opinion, the actual method of removing the bone from over the sinus itself is of considerable interest and sometimes a matter of extreme difficulty. Premature opening of the sinus before the plate has been sufficiently removed is an unfortunate surgical accident and adds in no small measure to the difficulty of the operation. This cannot always be avoided. The author's individual preference and method for removing the bone of the sinus plate is to shave it down to a minimum thickness with a careful use of the chisel and curette and then to lift it gently from the sinus with the careful use of the latter instrument. During this procedure it is essential that any possible adhesions between the sinus and the sinus plate be separated by introducing the curette between the sinus and the bone before it is pried away. Theoretically, the rongeur is a useful instrument in this procedure but the author has torn so many sinuses while using it that he has adopted the former procedure and has reserved the rongeur for the exceptional case.

After the sinus has been uncovered to a

sufficient extent, iodoform gauze plugs are placed above and below and the intermediate area is carefully incised in its longitudinal axes taking care to enter the lumen of the sinus but not to pass through it and injure the cerebral tissue that lies to its inner side. Theoretically, this procedure should be easy. Practically, the placing of the gauze plugs so that they completely occlude the posterior and inferior lumen is a matter of some technical difficulty. After this has been accomplished successfully and the sinus excised, the plug should be lifted from the interior end. If free bleeding follows, it is good presumptive evidence that there is no clot in the inferior end or in the jugular bulb.

This being the case, the inferior end of the sinus is repacked and the plug lifted from the posterior end, and if free bleeding follows, one can assume that there is no occluding clot in the sinus. If the sinus is occluded by a firm clot, it will be readily seen upon excision, and immediately the posterior end of the sinus plate should be removed until the posterior limits of the clot have been reached. The clot should be gently lifted out with forceps or a dull curette. (In the opinion of the author curetting of the interior of the sinus is a procedure that is contra-indicated.) After this has been accomplished, the same procedure is applied to the anterior or inferior end of the sinus. If the clot is found occluding the lumen in this location, an attempt to remove it may be made by the use of a dull curette or by gentle suction applied with a suitable instrument, such as a small catheter, to the clot itself. Promiscuous curetting of the inferior end and too vigorous efforts to enter the jugular bulb through the lateral sinus are contra-indicated. It is better to remove the clot as far as possible and leave the rest to nature.

Cases of sinus thrombosis that are marked by the presence of a frank clot are those that are fairly easy to deal with and in this connection it is hardly necessary to state that the absence of the visible clot and free bleeding from either end does not exclude a thrombophlebitis that is sufficient to account for all the symptoms. There has been some controversy as to the actual position of the iodoform plugs, but if properly placed, a plug does not itself pass into the lumen of the sinus but simply presses the walls of the sinus together.

Actual presence of an iodoform plug in the lumen of the lateral sinus serves no

useful purpose save that it stops a hemorrhage.

As far as the after-treatment is concerned, the original plugs placed in situ at the time of operation are left about five days at which time an attempt is made to remove them. If, at this time, any signs of bleeding occur at the ends of the sinuses, all attempts at their removal are stopped and the procedure is postponed for two or three days when it may be repeated. Usually at the end of seven or eight days these plugs may be removed at which time the wound may be treated as an ordinary mastoid cavity. It has been the observation of the author that these wounds invariably heal in a kindly manner.

Let us now go to a brief consideration of the operation on the jugular vein. Recently the question has been raised whether any operation on the jugular vein is of use in the prevention of the passage of infecting micro-organisms to the blood stream. It seems that on the soundest of clinical grounds the answer to this question is in the affirmative. What are the indications for operation on the jugular vein? If the condition of the patient permits, it is good surgery either to excise or ligate the jugular vein before operation on the mastoid or lateral sinus. If the condition of the patient is judged to be precarious, his life should not be hazarded by too strict an adherence to this rule and each case should be judged on its individual merits. In certain instances, especially in small children, the author cannot criticize the procedure of operating on the sinus and postponing ligation or excision of the vein according to the presence or absence of septic symptoms.

As regards the type of operation on the vein itself, the writer does not feel that he can be too arbitrary in deciding whether the vein should be excised or ligated. His individual preference is for excision of the jugular vein. In expert hands this operation can be performed with little, if any, more surgical trauma and shock than the operation of ligation. Furthermore, it has this decided advantage, that it is more certain of completely removing infected tissue. It is true that to-day we seem rarely to encounter veins containing a definite clot within their lumina, but almost invariably it has been found that the so-called normal veins removed by excision are the seat of a preliminary descending phlebitis in their outer coat. At the New York Eye and Ear

Infirmity this has been proven by microscopic section not only by the characteristic changes but by the actual presence of the bacteria in the same locality. Undoubtedly in the hands of a surgeon who has but an occasional opportunity to treat this condition the operation of ligation of the vein is a simpler one than that of excision. Possibly in certain cases occurring in women cosmetic considerations might be taken into account and the transverse incision used. Certain points in excision of the jugular vein may be of interest. The ordinary incision is made near the tip of the mastoid to the sternoclavicular articulation, the integument usually being incised at the first sweep of the knife. The platysma myoides is next encountered and should be carefully incised and search made for the anterior border of the sternomastoid muscle. Its anterior border should be clearly delineated. The common mistake is to go through the anterior part of the muscle and this mistake, if made, adds nothing but difficulties to the operation.

The round border of the muscle is delineated by sharp and dull dissection, and by a similar process its internal surface is carefully separated when the sheath containing the great vessels is seen, the jugular vein lying externally and being the most prominent. This is now carefully exposed throughout the entire length of the incision; the sheath picked up between two forceps and incised with the Mayo dissecting scissors. The vein is usually most easily found in the region of the omohyoid muscle from which locality it can be isolated upward in the above-mentioned manner. The vein should be isolated from below to some point above the facial vein. At this location a double ligature should be passed around the vein, care being taken not to include the vagus nerve which runs between and behind the great vessels. At this junction it is wise to issue a note of warning and a plea for extreme gentleness in handling the structures in this region. Tearing of the interior jugular vein in the region of its exit from the jugular foramen is a surgical accident that has serious consequences. The resulting hemorrhage in this region can only be controlled with packing and even then with difficulty. After the upper end of the jugular vein is ligated, the facial and thyroid veins are severed between double ligatures. The lower end of the vein near the omohyoid is ligated and cut away. There seems to be

no reason for putting unusually heavy ligatures around the inferior stump of the vein in this region. It has been the custom of the author to insert cigarette drains in the upper and lower angles of the wound and partially to suture the tissues and skin with interrupted sutures of plain cat gut and silk worm gut, respectively. The operative area may be considered infected from the descending phlebitis in the outer coats of the wall of the vein and usually breaks down.

In extremely sick cases, it is good surgery to leave the wound unsutured and to allow it subsequently to heal by granulation, the resulting scar being but slightly more unsightly than that of the sutured wound. In a severe case rarely does the wound in the neck heal by primary intention. In the operation of ligation the operative area is exposed by a similar though shorter incision. The vein is isolated above the facial and incised between double ligatures. For cosmetic reasons a transverse incision following the lines of cleavage of the skin may be contemplated. The author has never performed such an operation.

So much for the actual operative treatment of sinus thrombosis.

The author has never believed that a high temperature is a contra-indication to a generous regular diet, provided the patient has the appetite and his digestion is good. In feeding a patient, his likes and dislikes should be given the greatest consideration.

Blood transfusions in sinus surgery have contributed the greatest advance in the treatment of the disease for many years. Given before operation in a septic case, they prepare the patient for the surgical ordeal. Given after operation, they raise the resistance of the patient and stimulate the healing processes of the body. The author's experience has been with transfusions of whole blood. It seems to him that preference should be given to this method and citrated blood used only when whole blood is unavailable. The author believes that more aid is effected by repeated small transfusions than by one large one. This especially obtains in children. As a rule, transfusions from immunized donors, while theoretically of advantage, are impracticable on account of the time necessary to immunize the donor, and it has not been definitely proven that this theoretical advantage is an actuality.

This practically completes the surgical treatment of sinus thrombosis. Surgical

judgment of the physician will always play an important part in the ultimate successful outcome of the individual case. The question of manual dexterity of the operator has not been sufficiently emphasized in the treatment of this condition.

Before concluding, a few words should be said about sinus thrombosis occurring in a double mastoiditis. Life or death of the patient well-nigh hinges on a correct diagnosis. If the side of the sinus thrombosis is correctly diagnosed the patient has a chance for life. If the sound side is wrongly operated on, as a rule, a fatal outcome is inevitable. Possibly the method of determining the sinus involved should not be considered in this paper. The date of onset of either side and the severity of the pathological process uncovered at operation on either side must be given great consideration. In the long run possibly the best method is to uncover each lateral sinus and carefully inspect and weigh the significance of the pathological changes of the sinus wall. When the offending sinus

has been selected, it should be incised before ligation of the jugular vein. In this connection the Tobey-Ayer manometer test undoubtedly is of great value. The author cannot claim great familiarity with this method. His opinion, however, is that this method is of positive value when one or the other sinus is completely occluded, but unfortunately in most of his patients this is not the case. In this connection, also, the attending surgeon must remember that a double sinus thrombosis is a condition that can occur, and when chills and fever persist after the removal of a clot and ligation of the jugular vein in one side, this unfortunate but rare condition must be thought of.

In conclusion the author desires to state that the surgical treatment of sinus thrombosis is usually satisfactory when the diagnosis has been made promptly and the operative measures which have been discussed are performed with dexterity and good surgical judgment.

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#### FINANCING HOSPITALS BY SWEEPSTAKES

We hear from time to time about the lucky folks who win fortunes in the Irish Hospital Sweepstakes, but we hear very little about what the hospitals get out of it. Well, it seems that they harvest only a small fraction of one huge sum paid in by the gullible public, less than one-fourth, in fact. The London correspondent of the *Journal of the A. M. A.* gives us some interesting figures.

The total amount subscribed to the last Irish Hospital Sweepstakes amounts to nearly \$15,000,000. Of this, about \$9,000,000 was expended in prizes and the hospitals received \$2,600,000, the remainder being government taxation and promoter's remuneration. To date about \$150,000,000 has been received for these sweepstakes,

mainly from other countries than Ireland, and about \$100,000,000 has been distributed in prizes. Great Britain has subscribed about two-thirds of the money and also received two-thirds of the prizes. Ireland's subscription amounts to only about 7 per cent of the total. The Irish hospitals have received in all about \$32,500,000. At first, aid was given only to the Irish voluntary hospitals; but the government now allots a portion of the proceeds to tax-supported hospitals. So great has been the amount received that it is now proposed to endow the hospitals, so that support will be forthcoming even if this novel source of income should dry up. It is also proposed to finance research work in Ireland by these sweepstakes.

#### DILLINGER'S FACIAL REPAIR MAN

If Dillinger's disposition could have been made over and "moulded nearer to the heart's desire" by sort of "lifting" process, it would have been a great public service, but his facial alteration, intended to baffle the police, is something quite different, and the authorities are looking for the surgeon who did it. This is very disturbing to the profession, remarks the *New York Medical Week*. It is unfortunate that a specialty which has rehabilitated countless thousands of unfortunates to the benefit of society as well as themselves can so easily be turned to the purposes of crime. One unscrupulous charlatan allies himself with criminality and projects a dark shadow of opprobrium which temporarily obscures the great good that plastic repair has done to many deserving citizens.

The Dillinger case, following as it does recent

newspaper publicity on the possibility of altering finger prints with skin grafting, emphasizes the necessity for organizing plastic surgery as a distinct specialty with strictly defined standards. Only in this way can the disreputable elements be curbed and plastic repair removed from the province of irresponsible quacks.

The police are apparently confining their search for Dillinger's helper to licensed surgeons. For all that is known, the offender may be a lay cosmetician who, by daily disregard of the Medical Practice Act, has become callous to the violation of all law. In any event, whether he is an authorized or unlicensed surgeon, his early detection is greatly to be desired as a warning to others whom greed might persuade into similar complicity in crime.

# PHYSICAL THERAPY IN INDUSTRIAL INJURIES

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Syracuse

Physical therapy has established itself as an invaluable adjunct to the treatment of industrial injuries with some difficulty, with difficulty because industry demanded tangible results and, even more, results measurable from an economic standpoint. To those acquainted with the peculiar adaptations of physical therapy to the treatment of trauma and its sequelae, it may seem strange that this requirement was not easily met and recognition obtained.

Early the trouble lay in the tendency to utilize impressive but inefficient apparatus with little thought of the pathology present or the physiological effect of the modality in use. In the post-War period, with a wealth of clinical material, physical therapy, under government sponsorship in rehabilitation centers, reached a much more rational status. There was reasonably widespread dissemination of the knowledge of established principle and procedure. It was during this era that, led by a few outstanding physicians, this ancient but newly developed branch of medicine proved its worth in industrial injuries.

There was increased interest on the part of manufacturers of apparatus who embodied the old principles in more compact and more easily controlled machines and dressed them up in attractive and impressive cabinets and standards. Soon, however, there were extensive sales campaigns with the result that this expensive equipment which had to be paid for fell into the hands of medical men whose only standard of its value was contained in booklets and reprints furnished by the manufacturers. These pamphlets, as well as most of the current literature of the day, contained exaggerated claims of the therapeutic values inherent in the various electrical manifestations of these machines. Exploitation, perhaps unwitting by the tyro of this type, did much to discredit the advancing and valuable branch of medical science. The overemphasis by the untrained and by certain commercial clinics of the value of electrical currents and electrically generated heat of various types with neglect of the necessary exercises and manipulation remains to-day the glaring fault in physical

therapy as it is generally applied to industrial injuries. This fault happily is gradually being mended by the circulation of rational instruction through the County Medical Societies under the auspices of the Committee on Physical Therapy of the State Society as well as through the reports of the Council on Physical Therapy in the *Journal of the American Medical Association*.

The uses to which a knowledge of physical therapy may be put in the treatment of industrial traumata are numerous, but by far the most valuable service which it renders is in the preservation and restoration of joint function and it is with this subject that this paper has chiefly to deal. In considering the joint restrictions which are amenable to treatment—including prophylaxis in the term treatment—they seem to fall roughly into four groups on the basis of pathology involved.

(1) That group in which there is trauma to joint surfaces without essentially disturbing the mechanics of the joint. Here hemorrhage into the joint cavity or the covering of the apposed damaged surfaces with fibrinous exudate tend to form dense adhesions if immobilization is sufficiently prolonged. Concomitant tearing of the ligaments about the joints—almost always present—repairs during the immobilization period with excessive scar tissue formation.

(2) In those conditions in which the joint proper is not damaged but the extremity is immobilized by involuntary muscle spasm or therapeutic fixation, circulatory hypostasis and edema tend to produce periarticular fibrosis.

(3) Soft-tissue infections leave inflammatory exudates, the organization of which produces fibrosis and amalgamation of the tissue planes with consequent limitation of motion.

(4) Extensive destruction of soft tissues, particularly in the region of joints, by mechanical or thermal agents is followed by the production of dense scar tissue and the formation of adamant contractures.

Obviously, in all of these, a great deal

of the undesirable effects can be prevented by maintenance of adequate circulation and motion of the joints during the period when adhesions and fibrous tissue infiltration are in the process of formation. We are now treading on a decidedly controversial territory. Extremists on both sides of the problem have produced brilliant results at the risk of costly failures. The proponent of very early motion maintains the flexibility of joints, often at the cost of malunion of fractures and joint instability from insufficiently repaired ligaments. His strongest critic obtains perfect anatomical restoration after long immobilization, frequently at the expense of permanently limited function. We turned then to the middle course. The encouragement of motion in joints of the extremity not included in the fixation apparatus at least preserves function in these joints. This motion and activity of muscles also undoubtedly plays a part in promoting repair by maintaining adequate circulation as has been so convincingly pointed out by Boehler, of Vienna. Further, it has been demonstrated that once fibrous fixation of bone fragments has been obtained and osteogenesis started—arbitrarily in adults in fourteen to twenty-one days—careful motion of the joints on either side of the fracture can be carried out without essentially disturbing alignment of the fragments or endangering union. Recent improvement in methods of immobilization has done much to simplify this procedure.

That which holds true of fractures is also applicable to soft tissue injuries, notably sprains. Mechanical ingenuity in the application of strappings and prostheses to put damaged ligaments at rest in as perfect apposition as possible without complete immobilization of joints leaves the way open for the early application of physical therapy measures.

The treatment of infected parts in packs or baths containing warm hypertonic solutions and the insistence on early voluntary motion leaves surprisingly little restriction of joint range at the subsidence of the infection, particularly if elevation and support of the extremity in a position of physiological rest is practiced between periods of activity.

Immobilization of joints in a position to prevent scar tissue contractures after destruction of tissue by physical and thermal agents greatly simplifies the ultimate rehabilitation of these joints, even

though early motion may not be indicated because of its deleterious effect on epithelialization.

A considerable amount of space has been devoted to what might properly be termed prophylactic physical therapy because it is to-day the most generally neglected and perhaps the most valuable. The physical therapist, however, has usually little opportunity to apply these foregoing principles to industrial injuries unless perchance he heads the physical therapy department in a hospital with a more than usually enlightened surgical staff. The large part of his practice consists of postsurgical cripples whose treatment up to that time, so far as joint function is concerned, has been good, bad, or indifferent. However, by this time, as a rule, the wounds are healed, the infection controlled, or the bones united; the case has been referred for relief of pain, swelling, and restriction of motion.

The author has no conceit that he has anything new or startling to offer in the way of treatment of these conditions but opportunity has been granted him to treat a fairly large number of cases and to observe both the immediate and late results. At the same time, he has examined numerous similar cases treated elsewhere by physical therapy of various types and some in which no physical therapy whatever has been given. This has resulted in a fairly definite evaluation of the methods in common use to-day and a development of a routine of treatment based on the pathology present. This treatment seems to have produced maximum clinical improvement in the least possible time.

The equipment need not be elaborate. The whirlpool bath, both arm and leg, diathermy machine, infra-red radiator, and galvanic-current source will meet all requirements. We will consider for a moment the known physiological effects of these modalities: The whirlpool bath as a preparation for massage and manipulation has, in our opinion, no rival in the restoration of normal circulatory balance to a recently immobilized extremity. Run at 110° ordinarily for 45 minutes on the lower extremity and 30 minutes on the upper extremity, it produces an intense skin hyperemia. The comforting warmth and the gentle stimulation of the sensory nerve endings in the skin by the circulation of the water and bursting of the air bubbles produce in most cases prompt relief of pain. Relaxation of spastic muscles is evident to the pa-

tient as it is to the observer. Dilatation of the deep vessels has been described and evident increase in the volume of the limb bears this out clinically. These effects, combined with the buoyant action of the water, encourage active motion of the affected joints even in the most timid, a result difficult to obtain in many instances by any other modality.

It is desirable to have the whirlpool baths in a well-ventilated but draftless room or cubicle as the heat and humidity are uncomfortable to all patients and intolerable to some. Much of the discomfort of the heat and vapor may be eliminated by providing for the bath a removable cover with a cut-out for the extremity. The patient should be completely divested of his clothes and a gown provided so that he need not leave the treatment room in perspiration-soaked clothing. An abundance of drink-ink water should be available to him.

The high frequency current has been most valuable in promoting the absorption of effusions in joints and bursae. When heat and hyperemia are required to promote repair in deep structures, diathermy serves the purpose. However, the pathological area must be sufficiently circumscribed to permit its inclusion by the electrodes placed diametrically opposite each other. The double cuff and the cuff and plate methods in our hands have not been efficient. The choice of the electrode material is a matter of personal preference and experience. We have used a metal mesh over a moist rubber sponge held in place by gentle compression by an E clip when practical; otherwise, the mesh with the interstices filled in with electrolytic mucilage. In the second instance, the upper electrode is held in place by adhesion and gravity and the lower is held against the skin surface by a partially inflated basketball bladder upon which the extremity rests.

We have used infra-red to produce relaxation and hyperemia in locations where the application of diathermy or whirlpool is impracticable or in cases where open wounds or skin conditions preclude the use of whirlpool. We have little preference as to the source, whether it be an incandescent bulb or a dark-body radiator. It should be applied for a period of 45 to 60 minutes at the intensity most comfortable to the patient.

Both negative and positive galvanism have occasionally been found useful. The negative pole applied for 20 to 30 minutes

over an area of superficial scar tissue produces softening of the tissue in preparation for stretching, massage, and passive motion; the positive pole theoretically is sedative in its effect and produces organization of tissue. Occasionally we have had extremely satisfactory response in using positive galvanism for both of these effects over torn ligaments. Unfortunately, the results have been anything but consistent.

These modalities are definitely useful as preparation for massage and passive motion but will be found of little value when used alone. The technician skilled in massage and manipulation is the sine qua non of the physical therapy set-up. The physician may diagnose the pathology and prescribe the proper treatment, but the efficient, conscientious fulfillment of it is more or less out of his hands. Experience has taught us that a single technician is physically capable of efficiently handling sixteen to twenty average cases of joint restriction in a day. To attempt to do more is to do so at the risk of negligent or careless handling.

The types of massage are well known. Most valuable we have found to be a slow effleurage as deep as is comfortably tolerated, carried, of course, centripetally. Circular thumb massage skipping from place to place in an effort to "rub away the pain" we have found to be of little value. The only departures from this which come to mind are in the stretching thumb massage used to render more ductile superficial scar tissue and the kneading or petrissage so useful in producing relaxation about the shoulder girdle.

Passive motion must be given carefully and with due discretion. The ability to give passive motion properly is the mark of the accomplished technician. The patient must be completely relaxed and we require the reclining position in all but forearm and hand cases. Not only must the patient be relaxed but the technician must be in a comfortable position with the best leverage possible to avoid the introduction of muscular quivering from sustained effort. Passive motion should be carried out slowly and the joint maintained for an appreciable period at the limit of excursion tolerated by the patient. A happy medium must be struck in the force with which this passive motion is applied. To accomplish results ordinarily it must be somewhat uncomfortable. If discomfort lasts for more than two hours after the application of the passive force or if there is evidence of inflam-

matory reaction the following day with consequent decrease in joint range, gentler passives must be given. A good technician soon learns to gauge the proper limit at which to stop to gain the utmost improvement. A single passive excursion daily supplemented by active motion produces the optimum effect. The "pump-handling" type of passive succeeds only in irritating the joint and causing muscle spasm. It should never be resorted to. At times it is impossible to gain the relaxation of the patient and in some instances the opposition of the patient's muscles is too great to overcome. This is particularly true in dorsiflexion of the ankle and in flexion of the knee. Where there is strong resistance to dorsiflexion at the ankle we have adopted a simple method of having the patient stand two or three feet from a wall; facing it he places the palms of his hands against the wall and, flexing his elbows, permits his chest to approach as near to the wall as possible without lifting the heels from the floor, maintaining that position for from two to three minutes. A prolonged, steady passive flexion of the knee may be obtained by flexing the thigh with the patient reclining and putting a padded support in the popliteal space. Weights are then gradually added at the ankle until the tolerance of the patient has been reached. These weights may be allowed to remain until the resistant quadriceps has been fatigued.

So far, everything has been accomplished for the patient. In order to avail himself of the advantage already gained, wasted muscles must be built up and active use encouraged. This may be accomplished by formal exercises or by adequately supervised occupational therapy. A combination of the two is most desirable. However, an ingenious occupational therapist can devise interesting tasks which will include adequate exercise of the atrophied muscles as well as motion of the affected joints without making the process unduly onerous to the patient.

The average compensation patient lends himself very easily to prolonged treatment. It is wise to know when to stop; it is also advantageous to be able to present to the employer or insurance carrier who pays the bills an accurate record of the accomplishment. This is best done by examination of the patient at regular intervals during which time the appropriateness of treatment can be checked and the increase in joint range accurately measured. For the measurement of joint range, we have availed ourselves of a simple method, utilizing a flexible lead tape which is made to conform to the angle made by the joint and the angle then measured on an ordinary protractor.

If the proper procedures have been used, we have assumed that lack of appreciable progress over a period of two weeks indicates that the limit of improvement through treatment has been reached or that some systemic disturbance, such as absorption from toxic foci, is halting progress. Consideration of this important phase does not fall within the scope of this paper.

#### CONCLUSIONS

1. Joint restriction can often be prevented by early motion which stimulates rather than hinders repair.

2. The pathological process entering into the production of stiff joints must be recognized and the modality, the physiological effects of which are suited to its relief, applied.

3. The use of apparatus has definite value but only as a preliminary to skillful manipulation at the hands of the physician or well-trained technician.

4. Active use of the part, preferably under the supervision of an occupational therapist, is a necessary supplement to other physical therapy procedures.

5. Accurate records of accomplishment are highly desirable and treatment should not be prolonged beyond the period during which definite improvement takes place.

624 CHIMES BLDG.

#### RURAL HEALTH NEEDS NEGLECTED

Less than 600 of the 2,500 rural communities in the United States are provided with even a whole-time health officer, and not more than 100 of the counties now under the direction of whole-time health officers have what might be considered reasonably adequate health service. So Surgeon-General Hugh S. Cumming, U. S. Public Health Service, told the annual conference of Health Officers and Public Health Nurses at Saratoga

Springs. What is more, he added, less than 25 per cent of our rural population have at the present time adequate facilities for health protection. This problem is beyond the power of state health department personnel to cope with, he declares, and he believes that it is necessary that the local people themselves participate more or less directly in providing the funds for the maintenance of health service and in choosing those who shall look after their public health needs.



## STUDY AND TREATMENT OF AMENORRHEA

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Outstanding endocrine disorders, of which menstrual disturbances are a part, have been known for many decades, but until recent years no systematic study of endocrine dysfunctions has been attempted using all available diagnostic laboratory procedures. The rapid advances in the field of animal sex physiology, particularly the isolation of the hormones of the ovary, and the preparation of anterior pituitary-like hormone extracts from the urine of pregnancy, has stimulated interest in menstrual disturbances. In clinics throughout the world applications of the new sex physiology are being instituted with varying results, which of course means that the problem is not yet solved.

The object of presenting a study of amenorrheas, as a part of menstrual disturbances, is, first, to outline a method of study for purposes of diagnosis, a method which differentiates those of endocrine and nonendocrine origin and, second, to give the present-day status of treatment for those of endocrine origin.

The method of study of menstrual disturbances is taken in part from the comprehensive endocrine contributions of Rowe and Lawrence<sup>1</sup> and in part elaborated at the Strong Memorial Hospital. Rowe and Lawrence have correlated the clinical histories, physical findings, and all known diagnostic laboratory procedures on some four thousand cases of endocrine disease and from these data have classified endocrine disorder according to the gland primarily involved. It is necessary, according to these authors, that a complete history be taken, a thorough physical examination, and the usual laboratory procedures be done to rule out any acute or chronic disease and any blood dyscrasia, since they often simulate an endocrine picture. If these procedures reveal no disease, then the patient is studied for endocrine disturbances. It is necessary in cases of amenorrhea to rule out anatomical pelvic causes and early pregnancy.

If the above findings reduce the causes of amenorrhea to an endocrine disturbance, then the next step is to determine which gland is primarily involved. To accom-

plish this, the following tests and chemical studies are performed: a basal metabolism and galactose tolerance test are done, a sample of venous blood is taken for chemical analysis, particularly urea, N P N, uric acid, creatinine, and sugar, the urine is analyzed for the presence or absence of various constituents noted later, accurate visual field and blind-spot measurements are made and the fundi are examined for color, contour, and abnormalities, Sella turcica x rays are not taken unless indicated by neurological signs. A few of the tables from the work of Rowe and Lawrence on the differential diagnosis of endocrine disorders will serve to bring out the main points of significance. These tables give tendencies and not exact figures. The reader is referred to the original publications for the latter.

In their table on urine measurements (Table I) there is evidence of renal involvement associated with thyroid and adrenal failure as revealed by the presence of casts and albuminuria. Rowe and Lawrence claim that in the case of the thyroid the evidence of renal disease is that of pseudonephritis, while that of adrenal failure is associated with a true nephropathic condition. Sugar is present in the urine of adrenal and ovarian failure. Urobilinogen is usually present in pituitary hypofunction. The remaining urinary findings closely parallel the blood chemistry and need not be considered at this time.

TABLE I—URINE MEASUREMENTS—ENDOCRINE HYPOFUNCTION

Observation	Pit	Thy	Ov	Test	Adr
Volume	N or >	<	N or >	N	<
Elimination	N	<	<	N	<
Albumin	N	+	<	N	+
Casts	N	+	+	N	+
Sugar	Rarely	Rarely	+	N	+
Indican	N	>	>	N	N
Epithelial debris	N	>	>	N	>
Urobilinogen	+	>	>	N	>
Nitrogen elimination	N	<	<	N	<
Residual nitrogen	N or >	>	N or >	N	>
Phthalein elimination	N	<	<	N	<
Salol elimination	N	<	<	N	<
Urea curve	N	<	N	N	<
Urea index	N	N or <	N	N	<

In the table on blood chemistry (Table II) it should be noted that the nitrogen constituents and sugar are of definite diagnostic value. Note the increase in the uric acid content in pituitary hypofunction; the increase in N.P.N. and urea and a low normal sugar for hypothyroidism, and an increase of all nitrogen constituents of the blood except creatinine and a marked decrease in sugar in adrenal insufficiency. In the endocrine hypofunction the blood morphology is of little value so far as differential diagnosis is concerned, except in pituitary failure where there is a lymphocytosis and eosinophilia. The blood picture associated with adrenal insufficiency is that of an anemia.

TABLE II.—BLOOD CHEMISTRY—ENDOCRINE HYPOFUNCTION

Observation	Pit.	Thy.	Ov.	Tes.	Adr.
Nonprotein nitrogen ..	N	>	N	N	>>
Urea nitrogen .....	>	>>	N	N	>>>
Uric acid .....	>	N	N	N	>>
Creatinin .....	N	N	N	N	>
Residual nitrogen ....	N	N	N	N	>
Sugar .....	N Low	N	N	N	>

The table on basal metabolism (Table III) and sugar tolerance reveals relative changes. In the case of hypofunction of the glands it should be noted in all cases that the basal metabolism is decreased; greater in the thyroid, next in the adrenal, and the pituitary and ovarian are about alike. The tolerance for sugar in the pituitary cases is increased, in the thyroid cases it is about normal, in the ovarian hypofunction it is increased, and it is decreased in the adrenal cases. The opposite holds true, of course, for hyper-function of the pituitary gland and thyroid.

TABLE III.—BASAL METABOLISM AND SUGAR TOLERANCE ENDOCRINE HYPOFUNCTION

Observation	Pit.	Thy.	Ov.	Tes.	Adr.
Basal rate.	<	<<<	<	N or <sl	<<
Sugar tolerance	>>>	N or >	<<	N	<<<

HYPERFUNCTION

Observation	Pit.	Thy.
Basal rate.....	>	>>>
Sugar tolerance .....	<<<	N or <

By way of illustrating as simply as possible (Table IV) some of the diagnostic data, Rowe and Lawrence have compiled their findings on young adults each with about the same degree of glandular failure. They give this data merely as a setting in

ideal uncomplicated cases, and these must be used with due caution when interpreting and applying them, so far as other cases are concerned. Each case must be considered individually.

TABLE IV.—ILLUSTRATIVE DATA IN HYPOTHETICAL IDEAL CASES

	Pit.	Thy.	Ovary	Test.	Adr.
Basal rate.	—25%	—45%	—18%	—6%	—35%
Pulse .....	68	50	78	72	76
Respiration.	14	10	16	15	15
Temperature	98.2°	97.0°	98.2°	98.4°	97.8°
Blood pressure, systolic	110	100	98	112	90
Blood pressure, diastolic	70	60	65	75	60
Sugar tolerance	+100%	±0%	—50%	±0%	—83%

It is difficult in some instances to differentiate between pituitary and ovarian failure by the above procedure of Rowe and Lawrence. Siebka<sup>2, 3, 4</sup> has shown in cases which he classified as primary amenorrheas that there was a minimal amount of estrin in the urine. This finding has been confirmed in our clinic and in addition we have found that in amenorrhea due to pituitary failure the urine contains considerably more estrin; hence we have added the determination of urinary estrin to the procedure of Rowe and Lawrence. The method in brief is: a fresh 24-hour sample of urine is collected, acidified, and the estrin is completely extracted with benzene, according to a method previously published. The benzene is evaporated and the residue containing the estrin is dissolved in a definite amount of oil; this extract is injected into castrated female rats in graded doses to determine the daily amount of urinary estrin the patient excretes. In addition, in this clinic a sample of the endometrium is obtained by means of a small tubular curet, for purposes of correlation. This is not possible in all cases.

Following the above procedure, 27 cases of amenorrhea of endocrine origin have been studied and treated for over a period of at least 6 months to 2 years. These cases represent those of a true endocrine disturbance unassociated with any other disease, except as will be noted. The amenorrheas divide themselves naturally into primary and secondary. The primary group can be further divided, based on the size of the genitalia, first, into those with infantile type of genitalia and second, those with normal-sized genitalia. The following protocol illustrates the type of patient with

infantile genitalia. Three such patients have been studied.

The patient No. 38799 is a 23-year-old married woman who menstruated once at the age of 14 and who has not menstruated since, except for occasional spotting during 1 year. There is nothing in the present or past history of any diagnostic significance and the only positive findings are a moderate obesity and infantile genitalia. The laboratory studies were within normal limits except for a low blood sugar and an entire lack of urinary estrin in several samples of urine. The cervical canal was so small that it was impossible to obtain a sample of the endometrium. The patient was given 1,200 rat units of theelin over a period of 12 days. She did not menstruate nor did she have any premonitory symptoms of menstruation. Pelvic examination showed no change in the size of the uterus. Following the method of Kaufmann<sup>5</sup> she was given 10,000 rat units of progynon intramuscularly twice weekly for 5 doses, making a total of 50,000 rat units. She menstruated 7 days after the last injection for a period of 5 days. Menstruation is used in the sense of uterine bleeding only. Over a period of 5 months she received a total of 242,000 rat units of progynon, during which time she menstruated on several occasions. Pelvic examination at the end of this treatment showed no increase in the size of the uterus. It was still impossible to enter the cervical canal with the small tubular curet without anesthesia.

Kaufmann<sup>5</sup> treating amenorrhea with progynon in this type of case, that is, with infantile genitalia, obtained an enlargement of the uterus in 2 out of 5 cases as determined by examination. In one of his cases the patient was given 300,000 mouse units of progynon in 3 weeks following which she menstruated for 2 days. The treatment was continued until the patient received 600,000 mouse units or 120,000 rat units. The uterus before treatment was the size of a hazel nut and according to the author, it had reached twice the size at the end of the treatment.

His second case received 600,000 mouse units or 120,000 rat units during 6 weeks during which time she menstruated for 3 days. Treatment was continued, however, until she received 800,000 mouse units or 160,000 rat units in a period of 9 weeks. The uterus grew to twice its original size. The other 3 cases of Kaufmann in which no enlargement of the uterus occurred, received as much or more of the hormone preparation.

By administering progynon in the doses mentioned to this type of patient and following it with proluton, a preparation containing progesterin, the onset of the bleeding can be delayed for a number of days. The details of this procedure are to be published in a forthcoming paper. It is our experience in this type of case that so long as one gives substitution therapy, as described, menstrual bleeding will ensue but when the medication is discontinued, the patient will cease menstruating. Since it is the opinion of the author that the ovaries are secondary to the other endocrine glands of the body, particularly the pituitary, one must look elsewhere for the final treatment. If this type of patient could be seen before or at puberty, and if the proper growth-promoting and gonad-stimulating hormones of the pituitary gland were available for

therapy, then some hope for help could be entertained.

In the second group of primary amenorrheas, that is, those of normal-sized genitalia, estrin therapy may be of some value. This type of case is rare and the present protocol will serve to illustrate the one case we have studied.

Patient No. 82307 is a 27-year-old married nulliparous woman who menstruated first at the age of 17 and then only about once a year. She had numps in childhood and a question of thyroid hyperfunction when 21, for which she received Lugol's solution. The patient gives a multitude of symptoms which cannot be accounted for. Positive findings of the physical examination are marked hirsutism with male distribution of pubic hair, a slight exophthalmos, left ventricle preponderance, and hyperactive reflexes. Laboratory findings showed a basal metabolism of minus 18, a slightly increased tolerance for sugar. She had about 8 rat units of estrin in her urine. The blood chemistry showed nothing of significance. Blood morphology showed an increased lymphocytosis. She was given 2 courses of progynon treatment in a period of 2 months, a total of 100,000 rat units, and since cessation of treatment she has menstruated twice spontaneously.

Kaufmann<sup>5</sup> reports 2 cases of primary amenorrhea with normally developed genitalia, treated with both of the ovarian hormones, but was not able to induce spontaneous menstruation in either after cessation of treatment. Gauss and Buschbeck<sup>6</sup> following Kaufman's procedure using both ovarian hormones, were able to initiate a spontaneous menstrual cycle in a patient with secondary amenorrhea who had not menstruated for 10 years. Whether our reported case is a true hypogonad stimulated by ovarian therapy or whether there was interaction between pituitary hormone and the injected ovarian hormone causing a normal menstrual cycle, or whether the whole picture is mere coincidence, remains to be seen.

In general, it can safely be said that the treatment of primary amenorrhea, with either or both of the hormones of the ovary, is satisfactory so long as the medication is continued according to the method outlined by Kaufmann, but when therapy is discontinued, menstrual bleeding ceases. Further search must be made to find the substance which will institute and maintain a spontaneous cycle.

The group of secondary amenorrheas responds much better to therapy. These cases will be presented according to the gland which seems primarily responsible for the amenorrhea based on the method of study.

Eight cases of definite hypothyroidism have been studied, 4 of whom have been successfully treated, 3 of whom have had menstrual periods with varying degrees of

irregularity, and 1 of whom has been a complete failure.

The following protocol is that of one of the successfully treated cases.

Patient No. 80978 is an 18-year-old single female who menstruated regularly and normally every 28 days until 1 year before being seen in clinic. Nothing could be elicited in the past or family history of any diagnostic significance. There was nothing in the clinical history suggesting an endocrine disturbance except amenorrhea. The physical examination is entirely normal. A diagnosis of hypothyroidism was made on laboratory findings which showed a basal metabolism of minus 19, normal sugar tolerance test, normal blood chemistry except for a low normal blood sugar. The patient was given maintenance doses of thyroid gland for 2 months. The basal metabolic rate was brought to within normal limits. For the next 5 months she menstruated normally without medication.

Since hypothyroidism may be secondary to infection, one must continually be alert for its detection. One of our cases, No. 54290, ceased menstruating with a marked iritis and uveitis 3 years ago. When the infection had subsided, she was given maintenance doses of thyroid and began to menstruate regularly. While under treatment she developed an upper respiratory infection and her menstrual periods ceased until this infection cleared up. A basal metabolic rate done before her acute upper respiratory infection was normal was minus 24 after the infection subsided. The other laboratory findings were within normal limits.

Three of the partially successful cases may be due to the fact that they have not yet received the maintenance dose of thyroid preparation. Since there is no relationship between the basal metabolic rate and the amount of thyroid gland administered, each patient must be treated individually, and it is felt that when proper maintenance doses are reached, menstruation will ensue.

We have had a case of mild hyperthyroidism, No. 51419, who had amenorrhea for 6 months following a perfectly normal cycle. The clinical history and physical findings were entirely negative except for hyperactive reflexes and an accelerated pulse. The laboratory findings were all normal except a slight increase in the basal metabolic rate. The patient was given small doses of Lugol's solution for 2 months when the cycle became normal, and she has since been without medication.

We have had 4 cases of hypopituitary function, 2 of whom have been successfully treated and 1 partially successful. The last case was not treated because of a positive

Wassermann since it may be that her amenorrhea is secondary to her leutic condition.

One of the successfully treated cases, No. 56128, was an 18-year-old single girl who established a normal menstrual cycle at the age of 12, and has had intermittent periods of amenorrhea up to 9 months for the past 2 years. She had the usual childhood diseases. There was a loss of about 35 lb. of weight coincident with amenorrhea. The general physical examination was essentially normal. The laboratory findings revealed a basal metabolic rate of minus 6, and increased tolerance for galactose and 120 rat units of urinary estrin. The blood chemistry was normal except for a slight increase in uric acid. There was a 40 per cent blood lymphocytosis. The urine was negative except for a 2 plus urobilinogen. The patient was given 14 gr. enteric coated anterior lobe of the pituitary gland daily for 3 months. She apparently established a normal cycle after the second month of treatment and she has had 3 normal cycles since without medication.

In the other apparently successfully treated case the patient had 3 normal menstrual cycles while on medication. Medication was discontinued for 3 months, during which time the patient ceased menstruating. When resumed for a period of 2 months, the patient had 1 normal cycle. She has not been followed since.

The other successfully treated case had 4 normal cycles following medication with anterior pituitary gland by mouth following a period of amenorrhea of 1 year. Previously her cycles were every 2 to 3 months.

Organotherapy by mouth, particularly pituitary gland, has been advocated by some, while others consider it valueless. Most observers feel that the preparation given by mouth is without effect. However, Rowe and Lawrence<sup>3</sup> have been able to obtain some clinical results by using large doses, up to 35 gr. daily, of desiccated anterior lobe of the pituitary gland. It has apparently been successful in some of the cases of hypopituitarism. We have been able to establish a normal menstrual cycle with enteric coated desiccated anterior lobe of the pituitary gland by mouth, and it has proved of value in certain types of intermenstrual bleeding, published elsewhere.<sup>7</sup>

We have had 2 cases of hyperpituitarism diagnosed by our method of study. Both of these cases have been failures so far as initiating menstruation is concerned. Our only means at present of treating this type of case is by x-ray to the pituitary gland. This has been done in both cases. In 1 case the laboratory tests had been brought to

their normal levels but menstruation has not resulted. Rowe and Lawrence have also noted that x-ray therapy to the pituitary gland is without clinical effect but it may alter the laboratory tests.

In studying secondary amenorrheas there is a group of cases which are difficult of diagnosis so that any rational therapy is impossible. We have had 2 such cases. Early menopause falls into this group and at present nothing can be done for this type of patient.

#### DISCUSSION

Viewing the field of menstrual disturbances, so far as therapy is concerned, as a whole, the results are promising, but the problem is far from solved. Caution should be exercised in too hasty application of animal experimental findings to clinical problems. Much careful work needs to be done.

The interrelationship of the various glands to the ovary is still unsolved and the interrelationship between the hormones of the ovary so far as the human castrate is concerned, is not known. These problems are now being studied. As yet there is no growth-promoting or gonad-stimulating hormone of the pituitary gland available for clinical use. The pituitary like hormone made from the urine of pregnancy should be used with caution since its action in the human is not known. Recently Engle\* has shown that this type of preparation causes a cessation of ovarian activity with atresia of the large follicles and hyalinization of the small follicles in the monkey, while anterior lobe or extractions of the anterior lobe cause follicular growth.

#### SUMMARY AND CONCLUSIONS

1 A method of study of amenorrheas is presented which has for its purpose the diagnosis of the endocrine gland primarily involved after all diseases simulating endocrinopathies have been ruled out.

2 Twenty seven cases of amenorrheas of endocrine origin are presented.

3 The primary amenorrheas with infantile genitalia respond to estrin therapy only so long as the therapy is continued. No permanent enlargement of the uterus is noted in any cases of this type. Primary amenorrheas with normal sized genitalia may respond spontaneously after treatment with estrin or progynon.

4 Secondary amenorrheas may be hypothyroid or hyperthyroid or pituitary. They respond fairly well to the proper medication when given in sufficient doses except the cases of hyperpituitary function.

5 There is a certain group of amenorrheas which we have not been able to diagnose, and therefore rational therapy could not be instituted. Early menopause must be considered in the group of secondary amenorrheas.

The theelin was gratuitously supplied by Parke, Davis and Company, and the progynon by the Schering Corporation.

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STRONG MEMORIAL HOSPITAL

#### JUMPY SURGICAL PATIENTS

Nervous high strung people are not the best surgical risks in the world, as many surgeons no doubt are aware. It may be from sad experience that Dr Gordon Taylor prepared a paper on Bad Surgical Risks which he read before the surgery section of the British Medical Association in London at its recent meeting. Any surgeon of experience he observed will have convinced himself that the psychological undesirable considered from an operative viewpoint constitute as numerous and motley a collection as the Gilbertian list in *The Mikado*. That surgeon will be wise who refrains from any operation of convenience upon those who require much persuasion or overpersuasion; he should be aware of the apprehensive patient, and he will also regard with anxiety the man with huge piles of books on the tables at each side of his bed.

the man with the rapid pulse and the stack of French novels around him and likewise the individual who is reading his paper upside down!

An eventful recovery or worse may be confidently predicted for those who change their religion the night before an operation and for the politician or potentate who keeps the theater waiting while the final lines of his autobiography are completed. These types may well be regarded as bad risks before operation but the appearance of these eccentricities or unusual whims in a patient after surgery are sign posts of ominous portent. Unfortunately this attitude of mental unrest often develops only after an operation and the operator may be taken unawares. It is commonplace experience that clergymen, doctors, nurses, actors, and those of an artistic temperament are poor surgical risks.

## CASE REPORT

CALCIFIED VESSELS OF THE LOWER EXTREMITIES OF A  
YOUNG MAN

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Calcification of blood vessels associated with arteriosclerosis in the aged or with diabetes in the presenile period occasions no comment. In the age group from forty to fifty Morrison and Bogan<sup>1</sup> have demonstrated calcium in the arteries in 63 per cent of a group of diabetic patients as compared with 36 per cent in a group of non-diabetics.

Below the age of forty such findings appear to be uncommon in nondiabetics. Personal inquiry among orthopedic surgeons and medical men who see many cases of circulatory disturbances has brought the answer that the youngest of these cases within their recollections were about forty.

colitis for five years and also of some endocrine disturbances.

Surbeck<sup>2</sup> reported a case of an autopsy of a child three days old, in which in the pericardium was found a diplococcal infection associated with nephritis and lobular pneumonia. Syphilis was ruled out by anatomical investigation, by search for spirochetes in the liver, and by Wassermann reaction in the mother. Calcification of the vessels was found in the aorta, with all its branches, coronaries, carotids, femorals, vessels of the extremities, the pulmonary and all its branches. Also the kidneys, suprarenals, and the ovaries had calcium deposits.

A case of calcification at the age of 26 with-



Figure 1



Figure 2

Syphilis as a cause of calcium deposit in blood vessels is well-known and may apparently be operative at a very early age. Verocay<sup>3</sup> reported an instance in a girl of six months who suffered from congenital lues in whom was found extensive calcification of the arteries including the peripheral vessels.

Other factors, such as general debility from chronic colitis, may apparently account for early calcification. Bogar of the New England Deaconess Hospital in Boston has advised the writer in a personal communication that the youngest nondiabetic with calcified vessels seen in his clinics was a girl of eighteen, the subject of

out diabetes or syphilis or other known or demonstrable etiological factor seems rare enough to deserve recording.

The present case is that of a young man (J.B.), born in Russia of Semitic parents, single, an accountant, who consulted the writer in May 1931 when his age was 26. He complained of dull pain of about three years' duration over the medial surface of the right calcaneal region. There was also pain about the right ankle and knee; and later a "cold" sensation alternating with a "burning" sensation in the right thigh. The pain and hot and cold sensations bore no relation to weather or seasons and were relieved

in considerable measure by walking and exercise.

There was nothing significant in the family history. There was no record of illness of note other than the usual childhood diseases. He smoked about three or four cigarettes a day at most, some days none at all.

Physical examination, general, neurological, and local, was negative except for a hypotension, 104/60, and slight tenderness over the area of pain. The dorsalis pedis and posterior tibial pulsations were readily obtained. Laboratory tests for serum phosphates, calcium, sugar, creatinine, and urea nitrogen were all within normal limits. The blood Wassermann was negative. Tests for parathyroid functions were negative. X-rays taken by Dr. Maurice M. Pomeranze on July 21, 1931, showed calcified vessels of right ankle and foot. (Figs. 1 to 3.)

He passed from observation until March 1934 when examination revealed no changes and pulsation in dorsalis pedis and posterior tibial was again easily obtained. The pain on the right side was worse and for a year and a half a similar



Figure 3

pain had appeared on the left.

As a check on the earlier radiological findings, Dr. John R. Carty of the New York Hospital took films by the low voltage technic designed to emphasize soft tissue changes on June 16, 1934. He reported: "Films of the extremities show marked calcification of the larger blood vessels below the knee. There is a slight amount of calcification about the vessels of the knees. The vessels about the elbows show no definite evidence of calcification. We have then a widespread arteriosclerosis with calcification, more marked in the legs and feet." Figures 4 to 6 show three of these films

#### SUMMARY

A case is presented of calcification of blood vessels of the lower extremities, proven by x-ray, at the unusually early age of 26, in which no cause could be assigned for the changes. It has also been noted that, contrary to the rule in thrombo-angiitis obliterans, this patient experienced relief of discomfort in walking.

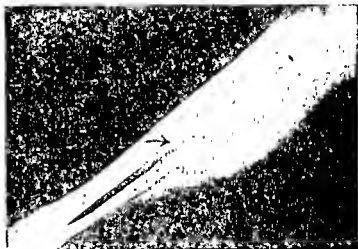


Figure 4

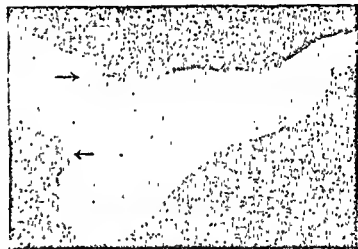


Figure 5

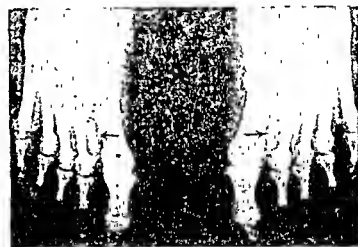


Figure 6

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## CASE REPORTS

### FAMILIAL PEPTIC ULCER

#### *A Family History*

ARTHUR M. DICKINSON, M.D.

*Albany*

The exact etiology of peptic ulcer is still a matter of speculation. Many theories have been advanced by the various students of the problem.

The following brief case histories of five siblings with proven peptic ulcers are presented to record what appears to be more than a simple coincidence. The five children who had proven ulcers did have the acute subcostal angle considered by Draper to be of significance. The entire family were of the tall, thin type which would suggest the acute subcostal angle to be a family characteristic. It will be noted that all members of this family were heavy eaters.

We acknowledge the transmission of physical and mental characteristics through the genes; this family presents definite evidence of transmission of physical characteristics. Therefore, it is not possible that some factor or factors, at present unknown, which play a part in the causation of peptic ulcer have likewise been transmitted.

#### HISTORY OF THE FAMILY

The father died at 68 of pneumonia; he had no stomach trouble. The mother is alive and well, age 65; she gives no history of stomach trouble. There were 11 children born of these parents, 6 boys and 5 girls. Two of the male siblings have died. James T., the individual reported in Case 1, died at the age of 34 of cerebral abscess. Frank T., Case 4, died following operation for peptic ulcer. The female children are alive and well with no history of stomach trouble except Helen T., Case 5. All but one of the males and two of the females live in their own homes. The entire family were remarkably well as children. All (except one) have bright red hair, are nervous and high strung. All members of the family, parents included, were heavy eaters, especially of bread, meat, and potatoes. One male sibling (Case 3) abuses alcohol. All members of the family are of the tall, thin type.

Following is a brief history of each of the five siblings who are known to have had peptic ulcers.

CASE 1.—James T., age 28, male, entered the Albany Hospital Oct. 27, 1920, with a history of indigestion of 8 years' duration. After study and x-ray examination, the patient was operated upon by Dr. Arthur W. Elting; at operation, a large

ulcer in the prepyloric region of the stomach was found. Operation consisted of posterior gastro-enterostomy and appendectomy; recovery was uneventful. (Reported through the courtesy of Dr. A. W. Elting.)

CASE 2.—John T., male, age 37, entered the Memorial Hospital April 3, 1928, with a history of indigestion of 5 years' duration. Clinical and x-ray study revealed a duodenal ulcer. At that time operation was advised but refused by the patient; medical treatment was instituted with definite improvement. Six months later, on account of recurrence of symptoms, the patient submitted to posterior gastro-enterostomy; recovery was uneventful. (Reported through the courtesy of Dr. Edgar A. Vander Veer.)

CASE 3.—Harry T., male, age 27, entered the Memorial Hospital on the writer's service, Oct. 1, 1933, with a history of severe indigestion for 6 weeks. Three hours before admission he had been seized with severe "pains in the stomach" and vomiting. Operation disclosed a perforated ulcer, located on the anterior surface of the stomach about 2.5 cm. from the pylorus. The ulcer-bearing area was destroyed with the cautery and the defect closed with a double layer of sutures. Recovery was uneventful but recent check-up reveals that the patient is not symptom-free.

CASE 4.—Frank T., male, age 38, entered the Memorial Hospital on the writer's service on March 14, 1934. He was complaining of indigestion of 8 years' standing with frequent attacks of vomiting in the past 4 months. Radiographs showed marked pyloric obstruction apparently due to old ulceration. In a few days, posterior gastro-enterostomy and appendectomy were done; at operation a badly scarred pylorus was found buried in many adhesions. This patient developed a postoperative pneumonia and died on his sixth postoperative day.

CASE 5.—Helen T., single, female, age 23. She has suffered with stomach trouble for about 3 years. Recent radiographs revealed a duodenal ulcer. This patient is under medical treatment. (Reported through the courtesy of Dr. John F. Mosher, Coeymans, N. Y.)

302 STATE STREET

Dr. Lawson G. Lowrey, of the New York City Mental Hygiene Committee, thinks that the rise in new serious mental cases shows "really a remarkable advance in consciousness in regard to mental hygiene on the part of the general public rather than any recession in community sanity. Mental conditions are recognized more readily to-day and the attitude of the community has

changed noticeably in recent years from one of hopelessness to one of confidence. It is now a well-known fact that a relatively large number of persons can be improved, if not cured, when properly treated. This attitude has brought about an increased use of facilities for the diagnosis and treatment of mental conditions."



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## EDITORIALS

### The Farmer and the Doctor

There is "one thing sacred," and that is "freedom of action." It is Owen D. Young speaking, and the man he pictures holding freedom sacred is the American farmer. Mr. Young was addressing an audience of farmers at the New York State Fair at Syracuse on September 4. The farmer "accepts no man as his boss," declared the author of the famous Young Plan. "He resents the discipline of the factory whistle," and, in fact, "all regimentation by anybody, for any purpose."

No one can read these splendid words without thinking of men of another calling who also resent regimentation. The farmer aids Nature in her lavish reproduction of plant and animal life, the doctor aids Nature in the birth, preservation and perfection of human life, health and happiness. Both are husbandmen, in different fields. Both need that "sacred freedom of action" to bring the best results. It is precisely because both join hands with Nature at a vital point for a like vital purpose that both require freedom to apply their skill to the best advantage. If you try to regiment them, to reduce

them to the level of "hands" then you curb and cramp their usefulness, and inu and hamper their activity. They must be individualists, they must demand freedom from coercion, they must resent the snooping and surveillance of petty bosses and managers or else be false to the task in the world which Nature has chosen for them and given into their care.

It is not for himself that the doctor makes this demand for freedom, it is for his work. Find the doctor who is pouring out his strength, his very life, in selfless toil to save the life and health of others, and there you will find the man who is fiercest in his demand that nobody shall interfere with his work. If you wish to rouse his wrath to white heat, try to put him on an eight hour day or a twelve hour day, or try to regulate one iota of his unremitting toil. The farmer, in the same mood, resents the daylight saving plan that would give him an extra hour of rest and recreation. He prefers to regulate his daylight to suit himself. It is in the very nature of the work of both farmer and doctor that they must be individualists.

Again, both the farmer and the doctor have seen the rewards of their labor dwindling in recent years to a point where they are suffering real distress. The legislative halls of the nation have echoed with political pleas for the farmer till our government has set up vast loan funds to "assist" the farmer to mortgage his property and crops so deeply that when the depression is over he will be lucky if he has a clear title to his wheelbarrow. The doctors, too, are to be taken care of by regimentation, they are to be assisted by enrolling them in panel systems such as prevail in European lands, where the plight of the harrassed, overworked, underpaid physician, bossed by lay managers, is certainly far from an improvement on American conditions.

Well what is to be done, then, to keep this bad dream from coming true? What does Mr. Young tell the farmer to do to preserve his sacred freedom of action? "If the farmer," says Mr. Young, "is not to be ground into pieces between the upper

and the nether millstone, he must *organize* for his own protection and demand that his business, too, shall receive its just and fair reward. Prizing freedom as he does, loathing interference as he must, there may be no other course." Substitute the doctor for the farmer in this strong statement, and we come pretty near getting a working program to cure the economic ills of the medical profession.

What is preventing it? Again Mr. Young seems to put his unerring finger on the spot. The farmers are free men, he says, but "they are so free and so highly individualistic that it is difficult to unify them in an organization for their own protection, even in these days when organized minorities seem to be all-powerful." Transpose this picture to the medical profession, and do we not see the thousands of physicians who fail to unify themselves with the county, state and national medical organizations? They are the reserves who, if they would, could turn the tide of battle. Now is the time when they are needed.

Without the farmer and the doctor, the race would fall a prey to starvation and disease. With these two forced into poverty and dependence, the people will suffer by that much in nutrition and health. When the nation realizes this vital fact, it will rally to their support with sympathy and enthusiasm. The only forces that can prevent it are the forces of ignorance and prejudice, and they can be defeated by a vigorous campaign of education and enlightenment. Inaction is the Old Plan—it has failed. Action is the Young Plan—why not try it?

### The Inter-State Post Graduate Medical Association of North America

Elsewhere in this issue will be found the full program of the coming International Assembly of this Association in Philadelphia in November next. While, ordinarily, space in the Journal cannot be devoted to scientific programs other than that of our own State Society, there are unique features in this assembly that may interest the entire membership.

The Association exercises no political or legislative duty, but aims to present the very latest and best in medical science. Diagnostic clinics, orations, symposia are offered by leading teachers and clinicians most of whom are members of faculties or connected with outstanding medical universities.

For the first time the annual assembly will be held east of the Alleghenies. The range of contributions covers all branches of medicine.

### The Expert Medical Witness

This discussion is not concerned with the unscrupulous physician, if such exists, who is out to sell his opinions to the highest bidder. Such a character is of course beneath all consideration, and the only remark that can be made about him is that his duplicity can usually be made clear to a jury by an able and alert lawyer.

What is of more practical concern to the readers of these pages is the problem that faces the honest physician who is called to court to give expert medical testimony. He finds himself thrown at once into the middle of a bitter tangle of conflicting interests, he is harried by opposing counsel, thinly veiled slurs are cast on his knowledge and on the truth of his statements, in an effort to confuse him and destroy the force of his testimony, and in spite of all he can do he often leaves the witness stand with the feeling that the impression he has left behind is not of the best.

Not a little criticism, indeed, has been made of the doctor as an expert witness, and when physicians are called by both sides in a suit and present opposite conclusions on the same set of facts, the reflections tend to be a bit caustic. A leading jurist of Ohio recently remarked in an address before the Cincinnati Academy of Medicine that "unfortunately there is no type of witness who is so frequently looked upon with suspicion as the medical expert." Why is this the case? Why do juries tend to take a doctor's testimony with a grain of salt?

The answer is found by this magistrate,

Judge Benton S. Oppenheimer, in the perhaps natural desire of the physician to see his own opinions vindicated, or to see his friends or patients win their case. Judge Oppenheimer makes this diagnosis after years of experience with expert witnesses. Even the very manner and demeanor of the witness, he says, may reveal bias and partisanship, and make the opinions of the witness valueless to the jurors.

It is perfectly right, of course, for the doctor to have his preferences. He may feel that justice demands that one side shall win and the other lose. But the fact remains that the moment he reveals his bias on the stand, he injures the cause he seeks to aid. His value as an expert witness rests on his attitude of absolute and undeviating impartiality. Lose that, and his words go for nothing.

Let him show that his only desire is to aid the jurors to a just verdict, then his influence rises to the highest point. Let him answer all questions frankly and fairly, let him keep his calm and dignity, and he will carry the jury with him. He must avoid parading his accomplishments or displaying his learning, or he may seem ridiculous, which is fatal. If he does not know some point, let him say so. It strengthens belief in his other assertions, and gives the opposing counsel no chance to show up his ignorance later.

Then there is that bugaboo, the hypothetical question. Some one has said that hypothetical questions "are of great length and labyrinthian construction, the ambiguity of which is equaled only by the profound darkness shed by the answers thereto." Judge Oppenheimer makes the wise suggestion that when the doctor is aware that such a hypothetical question is to be flashed upon him, he will do well to acquire a copy of it before he enters the court, so that he may study it. The witness has the privilege, too, of asking that the question be made understandable, and he may ask the counsel if there are not additional facts that enter into the situation. Finally, if the question is too obscure, involved, or dubious, the witness may say that he is unable to answer, and the court will never force an answer to a question which is not understood.

The kernel of the judge's advice is that the physician on the witness stand preserve an unshaken dignity, frankness and impartiality. This will influence the jurors far more, he assures us, than any display of learning and ability. It is something that every physician can command, and something that will go far to re-establish respect for expert medical testimony.

### Forgotten "Morro Castles"

The "Morro Castle" burns, with a loss of 135 lives, and the nation is shocked, acres of print discuss every detail, pages of pictures bring it to every eye. But suppose that four ships, one after another, in four successive weeks, burned with a loss of 135 lives each, and imagine then the sensation and outcry in the press and in every place where people meet. Well, even the toll of such a quadruple catastrophe would fall more than a hundred short of the number of victims of tuberculosis in New York State in June, 1934.

True, the death rate from pulmonary tuberculosis in the United States has dropped two thirds in 25 years and has fallen more than 50 per cent in this State and a world of credit is due the splendid workers who have brought it to pass, but the workers themselves would be the very first to say that the rate must be driven still lower. The well known special drive against tuberculosis in Syracuse proved that more effort will save even more lives. At more expense? Yes, but ridiculously less than the economic worth of the lives rescued.

All the wisdom of the Federal Government will be brought to bear on the "Morro Castle" holocaust to prevent any such marine disaster happening in the future, but the deaths from tuberculosis will keep on, week after week, month after month, year after year, because our federal, state, county, city, and town authorities do not seem to think it worth while to spend the money to save them. The Syracuse experiment showed that it is merely a matter of paying the bill for preventive measures and the death rate will drop. But because the victims are not burned to death on liners, few outside the medical

profession and the health service appear to care.

Let us look at another disease which we are finding preventable. More than 200 persons died of diphtheria and croup in New York City in 1932. Many of them might have been saved by preventive inoculation. Here is a disaster 50 per cent greater than the holocaust of the "Morro Castle." The lives of the 200 diphtheria victims were just as valuable as the lives of the 135 ship passengers. In the same year in New York City 3397 died of pulmonary tuberculosis, and thousands more of other diseases which no doubt might have been arrested if taken in time. Of all the 74,319 deaths in the city in that year (over 200 a day) only 120 are attributed to old age.

Here again, the morbidity and mortality of diphtheria, like tuberculosis, have been marvelously reduced in recent years, but the doctors and health workers are the sort of people who are never satisfied. In this state the campaign against diphtheria that started in 1925 cut the morbidity from 116 cases to only 20 per 100,000 population, and the mortality from 8.6 to a mere 1.1. The weapon was immunization, the fighting man was the family doctor. It

stands to reason that if these rates have been cut so splendidly, they can be reduced still further, and, as a matter of fact, the State Department of Health has a vigorous campaign on for that very purpose at this moment. Again, extra effort with but trifling addition to expense is the answer.

If we imagine human society as embarked on a great liner, threatened by flames which snatch their victims by the score, the hundred, the thousand, and if we imagine the doctors as the life-saving crew fighting the fire and pulling the victims from its grasp, then what shall we say of the indifference of authorities who fail to give the physicians their full co-operation, and what shall we say of a Congress at Washington which permits charlatans to engage in what is equal to spraying gasoline on the fire or throwing life-preservers of lead to the drowning? The spectacle of the Copeland Bill being strangled to death in the last Congress is a case in point.

It is splendid to be excited over the "Morro Castle" tragedy. It will be still finer when we grow excited over our other tragedies, too.

## COMMITTEE ON LEGISLATION

### FINAL BULLETIN OF SPECIAL LEGISLATIVE SESSION

September 22, 1934

The thirty-day period allowed the Governor for action upon bills passed by the Legislature at its special session has elapsed and we are in a position to give you the final report. There follows a statement of the action taken on the bills in which we were interested:

SENATE INT. 8—Ross (same as ASSEMBLY INT. 9—Banfield), appropriating \$1,500,000 for payment of indemnity for suppression and eradication of bovine tuberculosis to supplement similar payments to be made by Federal Government. Chapter No. 916.

SENATE INT. 15—Lord, appropriating \$1,500,000 for paying indemnities on account of bovine tuberculosis suppression. Died in Senate Finance Committee.

SENATE INT. 17—McNaboe, levying 2 per cent retail sales tax. Died in Senate Taxation Committee.

SENATE INT. 24—Fearon, provides for the supplying of free milk to undernourished babies and nursing mothers and for direct purchase of milk from dealers and distribution by welfare commissioners, local relief bureaus or other agency approved by the Temporary Emergency Relief Administration. Chapter No. 874.

SENATE INT. 71—Esquirol (same as ASSEMBLY INT. 45—Stewart), amending Education Law by providing a person to qualify as a registered nurse must be a citizen of the United States or shall have made application to become a citizen on or before September 1, 1935. Chapter No. 855.

ASSEMBLY INT. 5—Cornaire, appropriating \$1,500,000 to pay indemnities on account of bovine tuberculosis suppression. Vetoed by Governor.

ASSEMBLY INT. 93—Murphy, adding new section to the Education Law prohibiting

importation of a dog into State for scientific experiment, test or investigation involving laceration or incision or mutilation of, or the causing of pain or suffering to such dog. Died in the Assembly Education Committee.

We are in the midst of a campaign period and it is well to remember that this year we elect a Governor, Senators and Assemblymen. It is exceedingly important, therefore, that every chairman and members of his committee should make it a point of interviewing the various candidates to make certain that they are familiar with the Medical Society's point of view on medical questions so that full support may be given the proper candidates. With the objective of providing the citizens of the State with the best medical care and public health service obtainable, your committee has annually urged the county chairmen to interest themselves in securing the election of suitable men to the Legislature. In this period of social unrest this annual request is more important than ever. The Legislative Committee of the Illinois State Medical Society is making a similar request of its county committees and this appeal is so forceful that we are taking the liberty of including some excerpts in our communication. We should like to reproduce the entire letter.

In their home districts where votes are cast, politicians are superlative listeners, the best and most sensitive in the world. For this reason physicians are in a peculiarly strategic position to exercise an important and usually a determining influence in the character and trend of legislation, particularly on matters relating to medicine. As a political force, the organized medical profession does not claim great power and could not very well be otherwise. As individuals the physicians can and should be powerful factors in those political matters which influence the practice of medicine from the standpoint of patient, public, and doctor.

"In order to exercise his right of franchise intelligently and to perform his duty to himself and community every physician in Illinois should make it a point to meet and get acquainted with every candidate for the State and National legislatures. He should communicate to these candidates his opinions con-

cerning medical matters that are apt to be up for legislative consideration. A ten-minute chat with a candidate prior to election and under favorable circumstances is worth more in moulding his attitude on legislative matters than a dozen delegations of lobbyists after the General Assembly convenes.

'Physicians are intimately acquainted with many people. This gives to them a particularly advantageous approach to political leaders. By using this advantage the physician can obtain a sympathetic hearing that will have a powerful influence over the crystallization of thought in the minds of legislators.

"Your Legislative Committee wishes to urge upon you the duty and responsibility that is yours in respect to political matters. How or for whom you vote is relatively unimportant so far as party alignment is concerned. Your political faith, so far as parties are concerned, is a matter of indifference to your Committee. That you make contact with candidates and express your opinions on medical problems is of the greatest importance, however.

"Moulding legislative thought by contact with candidates is an opportunity, a privilege, and a duty of every physician. In this way he can do important constructive service in building the governmental structure on a sane, firm foundation. Criticizing politicians and bewailing government activity after new laws have been enacted is the poorest way known to correct undesirable trends much less to prevent evil legislation.

"Physicians as well as the public are aware of the many articles appearing in the daily press and current periodicals advocating the subsidizing of the medical profession, one of the most recent being 'A Plea for Socialized Medicine,' in the September issue of 'Mercury,' written by George W. Aspinwall, which the editor says is the pen name of an eminent New York physician. Silence and apathy on the part of the individual physician to such propaganda will be construed by the lawmakers as an approval of the medical profession."

HARRY ARANOW, *Chairman,*  
COMMITTEE ON LEGISLATION

## ENDORISING VOLUNTARY HEALTH INSURANCE

An interesting point is made by the *New York Medical Week* in its comment on the endorsement of voluntary health insurance by the American College of Surgeons. There is no evidence, it observes, that the vote of the delegates represented the opinion of the membership, for the Fellows, who are the voice their so important. By what

authority, it asks, did the Board of Regents, constituted for a totally different purpose, depart from their fixed road and take the path which might have serious consequences for the Fellows who elected them no less than for the profession as a whole? Even if the unanimous opinion of the Fellowship supported the Regents' stand, however, they would still represent only a minority of the physicians of the country.

# Medicolegal

LORENZ J. BROSNAN, ESQ.  
Counsel, Medical Society of the State of New York

## Illegal and Fraudulent Practice of Medicine

Recently a very interesting series of cases came before the Courts of one of the Western States involving a certain man who engaged in a type of medical quackery, which merit discussion in these columns.

The first of these cases was brought against the offender, H., to recover the sum of \$10,000 as damages, by an elderly woman, apparently a plain country woman of limited intelligence, upon charges that she had been the victim of a scheme to cheat and defraud her of various sums of money. She obtained a judgment against H., amounting to the sum demanded.

The facts that developed upon the trial were substantially as follows:

The plaintiff, G., was afflicted with a cancerous growth upon her left breast which, according to medical testimony, was at the time curable and consulted the defendant at his office. The plaintiff had heard that he had held himself out for a long time as a physician and surgeon able to treat and cure cancers. He examined her and made a diagnosis of her case by rubbing his fingers along her left arm. He told her that she did not have cancer for she did not have any "virus" in her blood. He told her, however, that she was suffering from kidney and a growth which would develop into cancer if left alone without treatment. He recommended to her a certain medicine which he called "oil of radium." He sold her two bottles of that medicine for \$125.00, telling her that the two bottles contained sufficient medicine to cure her. She was instructed to rub some of the contents of one bottle on the surface of the growth every day and to take the other bottle internally. She used the medicine as directed and upon rubbing it upon the cancerous growth, according to her testimony, it gave her pain and caused a bloody substance to exude from the growth. She returned to him after six weeks and he examined and told her she was improving. She again returned to H. three weeks later and at that time he again examined her by the method of running his fingers along her arm and exclaimed to her, "My God,

woman! What have you been doing? There is virus in your blood now." He sold her more of his "oil of radium" (which he told her was of a "higher specific") for \$45.00, which, he said, would cure the condition that she had developed. Some time later she again returned and he refused to examine her, but his secretary sold her more medicine. Still later she returned and H. examined her again and told her that she must keep on taking medicine for the "virus" in the blood and obtained from her a check for \$45.00 for another bottle of his "higher specific." At that time her husband became suspicious and stopped payment on the check and H. came to the plaintiff's home in an attempt to collect the \$45.00. The plaintiff lost faith in H. and his purported cures and sought medical advice and learned that the medicine that she had taken had done her no good and that while she was under the care of H., her condition, which actually was cancer, had become inoperable.

The testimony upon the trial, in addition to bringing out the above facts, showed clearly that the defendant went under the name of "Doctor," although he was not a physician licensed under the laws of the state. Respectable medical testimony was introduced on behalf of the plaintiff which showed that the plaintiff having relied upon the treatment prescribed by the defendant had neglected proper medical attention for her case and that her disease had grown worse until it was too late to administer any helpful treatment to her. It was established upon the trial that the preparation which the defendant called "oil of radium" was unknown to medical science.

The defendant attempted to claim that the treatment prescribed by him was a proper one and that the patient had sustained unsatisfactory results because she had not followed his directions.

The case was sent to the jury upon the theory of fraud and the plaintiff was awarded \$7500.00 as actual damages and \$2500.00 for punitive damages.

An appeal was taken and one of the chief contentions of H. was that the vic-

tim was entitled only to collect from him the amounts she had paid him for the medicines. The court, however, ruled that he had been guilty of a misdemeanor in the case, having undertaken to practice medicine without a license, and he should be liable for the damage that he had caused. The court in the opinion said:

"The defendant below manually, by feeling of plaintiff's arm and examining her, diagnosed her disease and prescribed a treatment therefor. He is therefore liable in civil damages for the detriment suffered by reason of his having violated an express statute. The wrong complained of is the violation of an express statute in the pretended practice of medicine. The damage claimed is an injury resulting by reason of preventing the plaintiff from securing proper medical attention. The question is, then, as to the breach of the statute, was such damage the natural, probable and approximate result of the acts of the defendant? The purpose of the statute was to prevent unskilled persons from preying upon an unsuspecting public and to eliminate the detriment that might be caused by malpractice. Hence, a person violating the statute does so with knowledge that one of its natural and probable consequences may be detriment caused both in pain and suffering and in neglect of proper medical attention."

Thereafter a similar suit came before the Courts in which H was held responsible for the sum of \$2000.00 damages. In that case the facts were as follows:

A certain S. B. had been suffering from some ailment for several months and consulted H at his offices with respect to her condition. She was advised by H and his wife of the ability of Dr. H and of the wonderful and extraordinary remedies that he dispensed for the purpose of treating all sorts of diseases. H made a diagnosis of her case and advised her that she was suffering from weak heart, weak lungs, weak kidneys and tuberculosis of bone tissue. He told her that she was dying by inches and that unless she took immediate treatment in the form which he directed her life would be very short. She agreed to undergo his form of treatment and purchased from him, at a cost of \$125.00, some of his "oil of radium." He told her at the time that the said medicine was a rare one and could not be procured in America except from him. She took the medicine as directed and,

according to her testimony upon the trial, it caused a burning sensation in her stomach and caused her a great amount of pain and suffering. After finding that the treatment directed by Dr. H was doing her absolutely no good, she sought medical attention and learned that she was suffering from chronic appendicitis. She underwent an operation for that condition and after that had been performed she regained her health.

The patient instituted an action against H, similar to the one previously mentioned, to recover damages for his false representations. Again the defendant sought to contend that the only action which the plaintiff might have against him was to recover the sum of \$125.00, the amount that had been paid to him by the patient, and again that contention was ruled out. Upon the trial the defendant sought to offer evidence that he had treated and cured other patients by the use of his extraordinary remedy, but the court excluded the said evidence and upon appeal the said ruling of the Trial Court was supported. The jury's award in favor of the plaintiff of \$2000.00 was not disturbed by the Appellate Court.

In a third case against H he was held responsible for \$3000.00 damages to another gullible woman who had purchased and used his "oil of radium" as a cancer cure, upon his representations that he was a licensed physician able to cure any and all human diseases.

After these persons and undoubtedly many others had received treatment at the hands of H, criminal charges of practicing medicine without a license were brought against him. The State's evidence was chiefly that of a patient who was examined by H and was told she had a tumor and was on the verge of "T.B." He had sold her two bottles of his "oil of radium" for \$125.00 to be used one for external and one for internal use.

Upon the trial H put in no testimony, and failed to take the stand in his behalf. His chief defense was that he had made no charge for advice or examination but had only charged a fee in connection with the sale of the medicine. The Appellate Court disposed of his said contention with the following language:

"He argues that it is no violation of law for any person to sell medicine in his home, and that the evidence does not sustain the charge. This contention cannot be sustained. It is evident that the physical examination, the pretended diagnosis,

and the imposing on the credulity of the patient by the sale of a worthless preparation for \$125.00 constitutes but a single transaction, and while it is probably true that at the time the defendant informed his patient he was charging the \$125.00 for the two bottles of drugs and not for the examination and diagnosis, this does not alter the situation. The entire transaction is a practice of medicine within the definition of the Medical Practice Act.

The fact that the defendant informed his patient at the time that this charge was for the pretended medicine is plainly but a subterfuge to avoid the provisions of the law."

The consistent stand of the Appellate Courts in each of these cases in refusing to give any sympathy to the various contentions of H. in his attempts to avoid the just consequences of the obvious quackery he had engaged in, is admirable.

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INTERNATIONAL ASSEMBLY  
of the  
INTER-STATE POSTGRADUATE MEDICAL ASSOCIATION  
of  
NORTH AMERICA

As previously announced in the JOURNAL, the Assembly of this organization will be held in Philadelphia, Pa., on November 5, 6, 7, 8, and 9, 1934. Through the combined efforts of the medical profession of Philadelphia, a stage is being set for a remarkable Assembly, which is bound to contribute a great deal of valuable scientific and clinical knowledge to the profession of North America. The program follows in detail.

### PROGRAM

Pre-Assembly Clinics, November 3rd;  
Post-Assembly Clinics, November 10th;  
Philadelphia Hospitals

Monday, November 5th

8:00 A. M.

Diagnostic Clinic: "Peptic Ulcer."

Dr. Edward J. Klopp, Professor of Surgery,  
Jefferson Medical College of Philadelphia,  
Philadelphia, Pa.

Diagnostic Clinic: "Tuberculosis of the Genito-Urinary Tract."

Dr. Hugh H. Young, Professor of Urology,  
Johns Hopkins University School of Medicine,  
and Director of the Brady Urological  
Institute, Johns Hopkins Hospital, Baltimore,  
Md.

Diagnostic Clinic: "Diagnosis and Treatment of Myxedema."

Dr. Cyrus C. Sturgis, Professor of Medicine,  
University of Michigan Medical School, and  
Director of the Thomas Henry Simpson  
Memorial Institute for Medical Research,  
Ann Arbor, Michigan.

*Intermission for Review of Exhibits*

Diagnostic Clinic: "Complications of Pregnancy."

Dr. John R. Fraser, Professor of Obstetrics  
and Gynecology, McGill University Faculty  
of Medicine, Montreal, Canada.

Diagnostic Clinic: "Hoarseness—Differential Diagnosis of the Manifold Diseases Accompanied by this Symptom."

(A) Chalk Demonstration of Pathologic Mechanism of Hoarseness.

Dr. Chevalier Jackson, Professor of Bronchoscopy and Esophagoscopy, Temple University School of Medicine, Philadelphia, Pa.

(B) Lantern Slide Demonstration of Clinical Cases.

Dr. Chevalier L. Jackson, Professor of Clinical Bronchoscopy and Esophagoscopy, Temple University School of Medicine, Philadelphia, Pa.

*Noon Intermission*

1:00 P. M.

Diagnostic Clinic: "Varieties of Goiter and Their Management."

Dr. Frank H. Lahey, Director of Surgery in the Lahey Clinic; Surgeon to the New England Baptist Hospital and New England Deaconess Hospital, Boston, Mass.

Address: "The Treatment of Chronic Constipation."

Dr. Frederick J. Kalteyer, Clinical Professor of Medicine, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Address: "Postoperative Complications."

Dr. Elliott C. Cutler, Moseley Professor of Surgery, Harvard University Medical School, Boston, Mass.

*Intermission for Review of Exhibits*

Address: "The X-ray Diagnosis of Various Pathological Conditions of the Small Intestine with Special Reference to Postoperative and Post-inflammatory Conditions."

Dr. James T. Case, Professor of Roentgenology, Northwestern University Medical School, Chicago, Illinois.

Address: "The Value of X-ray Therapy in Acute and Chronic Infection."

Dr. Willis F. Manges, Professor of Roentgenology, Jefferson Medical College of Philadelphia, Philadelphia, Pa.



Address "Concerning the Recognition of Certain Symptoms and External Ocular Signs Referable to General Diseases"

Dr. Thomas B. Holloway, Professor of Ophthalmology, School of Medicine, University of Pennsylvania, Philadelphia, Pa  
*Dinner Intermission*

7 00 P M.

Address "The Surgical Treatment of Tumors of the Suprarenal Gland"

Dr. Waltman Waters, Associate Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota

Address "New Method of Ventriculography through the Vault of the Orbit"

"Final Recovery of the Facial Spasm after Plastic Reduction of Nervous Fibers"

Dr. A. M. Dogliotti, Professor of Surgical Diagnostic, Royal University of Torino Vice-President of the International Society of Anesthesia, Member of the Reale Accademia di Medicina, Torino, Italy

Address "Qualitative Changes in the Neutrophilic Leucocytes," Illustrated with Natural Color Photomicrographs (10 min)

Dr. Russell L. Haden, Chief of the Medical Division, Cleveland Clinic, Cleveland, Ohio

Address "Certain Problems Presented by the Adolescent Period"

Dr. William Palmer Lucas, Clinical Professor of Pediatrics, University of California Medical School, San Francisco, California

Address "The Significance of Menopausal Bleeding"

Dr. Floyd E. Keene, William Goodell Professor of Gynecology, University of Pennsylvania School of Medicine, Philadelphia, Pa

Tuesday, November 6th

8 00 A M

Diagnostic Clinic "Chronic Appendicitis and Diseases which Stimulate It"

Dr. George P. Muller, Professor of Clinical Surgery, University of Pennsylvania Graduate School of Medicine, Surgeon to the Lankenau and Misericordia Hospitals, Philadelphia, Pa.

Diagnostic Clinic "The Simulation of Chronic Glomerulo-Nephritis by Conditions not Primarily Renal"

Dr. O. H. Perry Pepper, Professor of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pa

Diagnostic Clinic "Diagnosis and Treatment of Urinary Calculi"

Dr. William E. Lower, Cleveland Clinic, Cleveland, Ohio

*Intermission for Review of Exhibits*

Diagnostic Clinic and Address "The Basic Nature of Chronic Arthritis and the Principles underlying Treatment"

Dr. Robert B. Osgood, John Ball and Buckminster Brown Professor (Emeritus) of Orthopaedic Surgery, Harvard University Medical School, Boston, Mass., and

Dr. Ralph Pemberton, Professor of Medi-

cine, University of Pennsylvania Graduate School of Medicine, Philadelphia, Pa  
*Noon Intermission*

1 00 P M.

Diagnostic Clinic "Postoperative Abdominal Fistula"

Dr. John F. Erdmann, Attending Surgeon to the New York Post Graduate Hospital and Medical School, New York, N. Y.

Address "Recent Advances in the Treatment of Urinary Infection"

Dr. William C. Quinby, Clinical Professor of Genito Urinary Surgery, Harvard University Medical School, Boston, Mass.

Address "Chronic Duodenogastric Angle Ileus Simulating Gastric Crises of Tabes Dorsalis"

Dr. Ralph C. Brown, Clinical Professor of Medicine, Rush Medical College, University of Chicago, Chicago, Illinois

*Intermission for Review of Exhibits*

Address "The Treatment of Myomata—Operation and Irradiation"

Professor Dr. Har-  
of Obstetrics and  
sity, Director of  
Hospital, Berne, Switzerland

Address "The Management of Common Colds"

Dr. Perry G. Goldsmith, Professor of Otolaryngology, University of Toronto Faculty of Medicine, Chief Surgeon Department of Otolaryngology, Toronto General Hospital, Toronto, Can.

Address "Present Status of Immunization against Communicable Diseases"

Dr. John A. Kolmer, Professor of Medicine, Temple University School of Medicine and Director of the Research Institute of Cutaneous Medicine, Philadelphia, Pa

*Dinner Intermission*

7 00 P. M.

Address "Indications for and Type of Surgery in the Treatment of Duodenal Ulcer"

Dr. Roscoe R. Graham, Assistant Professor of Surgery, University of Toronto Faculty of Medicine, Senior Surgeon Toronto General Hospital, Toronto, Canada

Address "Clinical Aspects of the Various Important Types of Constitution"

Dr. Lewellys F. Barker, Professor Emeritus of Medicine, Johns Hopkins University School of Medicine, Visiting Physician, Johns Hopkins Hospital, Baltimore, Md.

Address "Technique of Pneumonectomy and Lobectomy" (10 min)

Dr. William F. Riehoff, Jr., Instructor in Surgical Anatomy, and Associate in Surgery, Johns Hopkins University School of Medicine, Baltimore Md.

Address "Diagnosis of Pancreatic Cysts"

Dr. Allen O. Whipple, Professor of Surgery, Columbia University College of Physicians and Surgeons, New York, N. Y.

Address "Vascular Crises"

Dr. David Riesman, Professor Emeritus of Clinical Medicine, and Professor of the History of Medicine, University of Pennsylvania School of Medicine, Philadelphia Pa

## Wednesday, November 7th

8:00 A. M.

Diagnostic Clinic: "Differential Diagnosis of Syphilitic and Non-Syphilitic Eruptions."  
Dr. Frank C. Knowles, Professor of Dermatology, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Diagnostic Clinic: "Pain."

Dr. John M. T. Finney, Professor of Clinical Surgery, Johns Hopkins University School of Medicine; President of Inter-State Post Graduate Medical Association of North America, Baltimore, Md.

Diagnostic Clinic: "What Constitutes a Good History."

Dr. William D. Haggard, Professor of Clinical Surgery, Vanderbilt University School of Medicine; President, American College of Surgeons, Nashville, Tenn.

*Intermission for Review of Exhibits*

Diagnostic Clinic: "The Significance of Jaundice."

Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard University Medical School, and Physician-in-Chief, Peter Bent Brigham Hospital, Boston, Mass.

Diagnostic Clinic: "Diagnosis and Treatment of Brain Tumors."

Dr. Walter E. Dandy, Adjunct Professor of Neurological Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

*Noon Intermission*

1:00 P. M.

Address: "The Surgery of Amelioration for Intractable Urological Lesions."

Dr. Joseph F. McCarthy, Professor of Clinical Urology, Executive Officer of Department of Urology, New York Post Graduate Medical School, Columbia University, New York, N. Y.

Address:

Dr. Paul Strassmann, Professor of Obstetrics and Gynecology, Medical Department, University of Berlin, Berlin, Germany.

Address: "Pregnancy Associated with Diabetes."  
"The Use of Cholesterol in the Treatment of Diabetes."

Dr. Elliott P. Joslin, Clinical Professor of Medicine, Harvard University Medical School, Boston, Mass.

Address:

Dr. William J. Mayo, Chief of Staff, Mayo Clinic, Rochester, Minn.

*Intermission for Review of Exhibits*

Address: "Problems Relating to Peritonitis."

Dr. Vernon C. David, Clinical Professor of Surgery, Rush Medical College, University of Chicago, Chicago, Illinois.

Address: "Chronic and Recurring Diarrheas."

Dr. Robert G. Torrey, Professor of Medicine, Woman's Medical College of Pennsylvania, and Physician to the Philadelphia General Hospital, Philadelphia, Pa.

Address: "Fundamental Physiological Concepts Differentiating Arterial from Arteriovenous Lesions and Their Importance in Relation to Surgical Therapy." Clinical and Experimental Studies.

Dr. Emile F. Holman, Professor of Surgery, Stanford University School of Medicine, San Francisco, California.

Address: "Streptococcus Infections."

Dr. Warfield T. Longcope, Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, Md.

*Dinner Intermission*

## CONVENTION DINNER

Addresses by Distinguished Guests

## Thursday, November 8th

8:00 A. M.

Diagnostic Clinic: "Functional Disorders of the Gastro-Intestinal Tract."

Dr. Alfred Stengel, Professor of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pa.

Diagnostic Clinic: "Back Injuries."

Dr. John J. Moorhead, Clinical Professor of Surgery, New York Post Graduate Medical School, New York, N. Y.

Diagnostic Clinic: "Malignant Hypertension, Manifestations and Treatment."

Dr. Campbell P. Howard, Professor of Medicine, McGill University Faculty of Medicine, Physician to the Montreal General Hospital, Montreal, Canada.

*Intermission for Review of Exhibits*

Diagnostic Clinic: "Benign Tumors of the Breast."

Dr. Dean D. Lewis, Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Diagnostic Clinic: "Pain in the Chest."

Dr. James H. Means, Jackson Professor of Clinical Medicine, Harvard University Medical School, and Chief of the Medical Services, Massachusetts General Hospital, Boston, Mass.

*Noon Intermission*

1:00 P. M.

Diagnostic Clinic: "Differential Diagnosis of Border Line Cases."

Dr. Hugh Cabot, Professor of Surgery, University of Minnesota, Graduate School of Medicine, and Consulting Surgeon at the Mayo Clinic, Rochester, Minnesota.

Address: "Gynecological and Obstetrical Applications of Endocrinology."

Dr. Emil Novak, Associate in Gynecology, Johns Hopkins University School of Medicine, Baltimore, Md.

Address: "Litigation of the Splenic Artery in Some Splenomegalic Affections."

Dr. Roberto Alessandri, Professor of Surgery, Royal University of Rome, Rome, Italy.

*Intermission for Review of Exhibits*

Address: "Diverticulitis and Carcinoma of the Colon with Special Reference to the Differential Diagnosis."

Dr. Ross Golden, Associate Professor of

Medicine, Columbia University College of Physicians and Surgeons, Attending Physician Roentgen Ray Department, Presbyterian Hospital, New York, N Y

Address 'The Treatment of Acute and Chronic Mastoiditis'

Dr. Fielding O Lewis, Professor of Laryngology, Jefferson Medical College of Philadelphia, Philadelphia, Pa

Address 'The Diagnosis and Management of Diseases of the Biliary Tract'

Dr W. Wayne Babcock, Professor of Surgery, Temple University School of Medicine Surgeon Philadelphia General Hospital, Philadelphia, Pa

*Dinner Intermission*

7 00 P M

Address 'The Surgical Aspects of Essential Hypertension'

Dr George J Heuer, Professor of Surgery, Cornell University Medical College, New York, N Y

and

Dr I H Page, Rockefeller Institute for Medical Research, New York N Y

Address 'Some Aspects of the Etiology, Diagnosis and Treatment of Anemia'

Dr George R Minot, Professor of Medicine, Harvard University Medical School, Director, Thorndike Memorial Laboratory Visiting Physician, Boston City Hospital, Boston, Mass

Address 'Certain Aspects of Surgery of the Large Intestine' (10 min)

Dr Richard B Cattell, Lahey Clinic, Boston, Mass

Address 'The Relation of the Endocrines to the Psychoses'

Dr Louis J. Karnosh, Assistant Clinical Professor of Nervous Diseases, Western Reserve University School of Medicine, Cleveland, Ohio

Address 'Intracranial Injuries of the New Born from the Standpoint of the General Practitioner' (Moving Picture Demonstration)

Dr P. Brooke Bland, Professor of Obstetrics, Jefferson Medical College of Philadelphia, Philadelphia Pa

Friday, November 9th

8 00 A M

Diagnostic Clinic 'Pohomyelitis'

Dr John Claxton Gittings, William H Bennett, Professor of Pediatrics, University of Pennsylvania School of Medicine, Philadelphia, Pa

Diagnostic Clinic 'The Diagnosis of Primary Pituitary and Parapituitary Lesions'

Dr Charles H Frazier, John Rhea Barton Professor of Surgery University of Pennsylvania School of Medicine, Philadelphia, Pa

Diagnostic Clinic 'Primary Carcinoma of the Lung'

Dr. Evarts A Graham, Bryby Professor of Surgery, Washington University School of Medicine, St Louis, Mo

*Intermission for Review of Exhibits*

Diagnostic Clinic 'Polyglandular Disease'

Dr. George Crile, Cleveland Clinic, Cleveland Ohio

Diagnostic Clinic 'Pernicious Anemia and Leukemia'

Dr Harlow Brooks, Emeritus Professor of Clinical Medicine, New York University and Bellevue Hospital Medical College, New York, N Y

*Noon Intermission*

1 00 P M

Diagnostic Clinic 'Differential Diagnosis of Tuberculous and Non Tuberculous Infection'

Dr. Charles R Austrian, Associate Professor of Medicine Johns Hopkins University School of Medicine Baltimore, Md

Diagnostic Clinic 'The Curability of Carcinoma'

Dr E Starr Judd, Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minn

Address 'Recent Advances in our Knowledge of the Thymus and Pineal Glands'

Dr Leonard G Rowntree, Director of the Philadelphia Institute for Medical Research, Clinician to the Philadelphia General Hospital, Philadelphia, Pa

Address

Dr Charles H Mayo, Professor of Surgery, University of Minnesota Medical School, and University of Minnesota Graduate School of Medicine, (Mayo Foundation), Rochester, Minn

*Intermission for Review of Exhibits*

Address 'The Treatment of Hirschsprung's Disease'

Dr Fred W Rankin, Lexington, Kentucky

Address 'The Present Status of Surgery of the Sympathetic Nervous System'

Dr Alfred W Adson, Professor of Neurosurgery University of Minnesota Graduate School of Medicine Chief of the Neurological Department, Mayo Clinic Rochester, Minn

Address 'Functional Nervous Disorders in Children'

Dr Edward L Bauer, Professor of Diseases of Children, Jefferson Medical College of Philadelphia, Pediatricist to the Jefferson Hospital, Philadelphia, Pa

TENTATIVE FOREIGN ACCEPTANCES

Dr Ferdinand Sauerbruch, Prof and Head of the Department of Surgery, University of Berlin, Berlin Germany

Sir Harold Gillies, London, England

# Books

## BOOKS REVIEWED

**Red Blood Cell Diameters.**—By Cecil Price-Jones, M.B. Octavo of 82 pages. New York, Oxford University Press, 1933. Cloth, \$3.50.

This concise book of 80 pages deals with the history of red blood-cell mensuration and the present-day methods of measuring the diameters of the erythrocytes. It contains many interesting charts and graphs of the size of red blood-cell diameters in health and disease. The book is of especial value to technicians and those interested in hematology.

REGINALD J. BLABER

**The Harvey Lectures.**—Delivered Under the Auspices of the Harvey Society of New York, 1932-1933. Series 28. Julius Bauer, M.D., L. O. Kunkel, M.D., and others. Octavo of 233 pages, illustrated. Baltimore, Williams & Wilkins Company, 1934. Cloth, \$4.00.

The 1932-1933 series continues to maintain its traditional and high standard of lectures with the following: Constitutional Principle in Clinical Medicine, by Julius Bauer: A dissertation on genetics in constitution and its role in disease. There are interesting remarks on genotypical chromosomal relationships in a large series of hereditary diseases.

Diseases of Vegetables and Man, by L. O. Kunkel: A description of various virus diseases which occur in both plant and animal life treating particularly with the similarity of their biological behavior.

Nature of Menstrual Cycle, by G. W. Corner: A very clear presentation of ovulation in its relation to menstruation which includes much of the author's own experiments in monkeys.

Dyspituitarism, by Harvey Cushing: The second lecture on the same subject after a further experience over a period of 24 years. This lecture deals largely with the functioning adenomatous tumor of the anterior pituitary.

Oxidation of Hemoglobin and other Respiratory Pigments, by James E. Conant: Concerned with the molecular structure of hemoglobin and hemocyanin, their physicochemical behavior, and their rôle in oxygen transport.

Other lectures include: Contributions of Chemistry to Knowledge of Immune Processes, by Michael Heidelberger; Liver Function in Relation to Fat Metabolism, by J. C. Drummond; Transmission of Nervous Impulse, by Otto Loewi.

WILLIAM S. COLLENS

**Localization of Function in the Cerebral Cortex.**—An Investigation of the Most Recent Advances. Proceedings of the Association for Research in Nervous and Mental Disease. Vol. XIII, 1932. Octavo of 667 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1934. Cloth, \$8.00.

This volume covers the anatomical, physiological, and clinical aspects of this complicated topic. In the anatomical section Dr. Tilney deals mainly with the phylogeny and ontogeny of the cerebral cortex. In the physiological section there are presented the results of a study made by Drs. J. P. Fulton and Margaret A. Kennard on the flaccid and spastic paralyses produced in primates by lesions of the cerebral cortex. The final section of the book will appeal most to neurologists by reason of the clinical value of the studies made. Frazer and Rowe report on 51 tumors of the temporal lobes. A carefully studied case of bilateral lobectomy of the frontal lobes is reported by Dandy. In a similar manner, Drs. Penfield and Jos. Evans report on their case of lobectomies. Various lobes were removed with surprisingly little functional disturbance. In a study of functional disturbances caused by lesions of the post-Rolandic area, Winkelman and Silverstein find, in addition to the usual sensory disturbances, atrophy of the muscles in the contralateral limbs and trophic changes. For lack of space one must of necessity omit the consideration of other very interesting papers. Altogether, this volume is packed with interesting matter, presented by masters in their respective fields.

JOSEPH SMITH

**Aids to Pathological Technique.**—By David H. Haler. 16mo. of 187 pages. Baltimore, William Wood & Company, 1933. Cloth, \$1.50.

This pocket size volume is a combination of laboratory manual and compend for students preparing for examination. The author presents laboratory methods in bacteriology, hematology, cytology and parasitology, biochemistry, the preparation of culture media, and formulae for solutions and stains. But one method is given for each test and there is no theoretical discussion

except to give the principles underlying some of the tests. There are a few pen and ink illustrations.

The author is an English pathologist and some of his methods, especially the technic of the Wasserman test and some of the methods in hematology, are different from American methods. However, this is a very practical little handbook.

E. B. SMITH

**Les Artères Coronaires du Coeur Chez L'Homme.**—By Docteur Aime Mouchet. Second Edition. Quarto of 63 pages and 13 plates. Paris, Norbert Maloine, 1933.

Professor Mouchet has written an exceedingly interesting monograph dealing with the anatomy of the coronary arteries and their anastomoses. He has employed three important methods of study: (1) systematic dissection and mensuration of the coronaries in 200 hearts, (2) radiographic study after injection in 300 hearts, (3) perfusion experiments to study anastomoses in 100 specimens.

He gives a clear and authoritative description of the anatomical distribution of both coronaries, describing in each instance the commonest arrangement and three other less common distributions. His description of the blood supply of the auricles and of the conduction system is especially good.

As to the question of anastomoses between right and left coronary arteries, he brings clear evidence to show that such anastomoses do exist, that they are absent in some instances, rarely voluminous, and that they are usually represented by very fine arterioles. The question of the value of these anastomoses he leaves to the physiologist.

The last half of the volume is made up of seventeen beautiful reproductions of radiographs of injected coronaries. The possession of these alone makes the work desirable.

EDWIN P. MAYNARD, JR.

**Demonstrations of Physical Signs in Clinical Surgery.**—By Hamilton Bailey, F.R.C.S. Fourth Edition. Octavo of 287 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$6.50.

This is the latest revision of a most interesting work well illustrated by actual bedside examination technic. The illustrations are worth careful study, especially when described by one associated in the teaching of physical examination to the student body at the Liverpool Royal Infirmary, England. The reading matter is exceptionally clear in imparting fine points of differential diagnosis as well as succinctly stating the logical points elicited in arriving at a definite diagnosis. To one beginning a surgical career such a book should be read twice each year.

EUGENE W. SKELTON

**An Outline of Immunity.**—By W. W. C. Topley, M.D. Octavo of 415 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$6.00.

This is intended for the special student and investigator in this field. It is adequately practical throughout, emphasizing the applications of immunity to practice as well as demonstrating laboratory and field procedures. The general outline is excellent, and the use of sub-headings and spacing with different type forms adds greatly to emphasis and attractiveness. References included are basic and are not always those that agree with the author's conclusions. The reviewer is particularly complimentary in the selection of mathematical data and the illustrations in general.

IRVING M. DERBY

**Acute Intestinal Obstruction.**—By Monroe A. McIver, M.D. Octavo of 430 pages, illustrated. New York, Paul B. Hoeber, Inc., 1934. Cloth, \$7.50.

In this excellent comprehensive review of the subject, the author has divided his work into three parts. In Part 1, the author discusses the general picture of the disease; in Part 2, he deals with the diagnosis and methods of treatment; and in Part 3, there is a discussion of the experimental work which has been done to determine the cause of death from intestinal obstruction. The experimental work and the clinical and pathological material dealing with the subject are thoroughly discussed and a complete bibliography is appended at the end of each chapter.

The illustrations and the entire arrangement of the book are excellent. Both the surgeon and the internist as well as those interested in the experimental work relating to intestinal obstruction will derive a great deal of pleasure and value from this monograph.

IRVING GRAY

**CARCINOMA OF THE TONSIL***Clinical Study of 176 Cases With Histologic Diagnoses*

JAMES J. DUFFY, M.D.

*Assistant Attending Surgeon Memorial Hospital New York City*

In the discussion of carcinoma of the tonsil, it is not often possible to isolate the tonsillar tumors from those of the pillars, because the disease has so far progressed when first seen that both these regions are involved, and usually one or more contiguous portions of the oral cavity.

Because of the low incidence of tonsillar carcinoma in general, few clinical studies have been made, but the relative frequency of carcinoma of the tonsil in relation to the intra oral group of cancer should be a stimulus to greater efforts to make an early diagnosis, and especially to improve the therapy of this disease. The relative frequency is demonstrated by the fact that of every ten patients with intra oral cancer admitted to Memorial Hospital between 1919 and 1929, one had carcinoma of the tonsil.

There is a large surface area of epithelium covering the tonsil, though limited to a small region. The lymphoid tissue of the tonsil is covered by the tunica mucosa, consisting of stratified epithelium of several layers, with flattened cells on the surface and columnar cells beneath. This epithelium serves as a lining to the microscopic depressions, between ten and twenty, which are the crypts. These are irregularly tubular and are sometimes branched. This epithelial surface with the many infoldings and with the convexity of the pillars, constitutes more epithelial surface than is apparent from casual inspection.

The diagnosis of carcinoma of the tonsil is not always simple. The first symptoms may be no more than would accompany a mild throat infection. The more common sequence of symptoms is discomfort as in ordinary infection of this region "sticking sensation" constant irritation, soreness,

especially on swallowing, and in advanced stages, pain, referable to ear, head, and neck. The local discomfort usually indicates that the lesion is not widespread, whereas if the reference of pain is to ear and head, the lesion will be found to be infiltrating the deeper tissues and the base of the tongue, or there is an obvious mass in the upper deep cervical regions, causing pressure on the cervical nerves.

The duration of symptoms in patients applying for admission is rarely less than two months, usually four months and often six or more months. A neoplasm of the tonsil may and usually does progress far in four months. Though the histologic grading, per se may not indicate a high grade of malignancy, the location of the growth, with its profuse blood supply and lymph drainage, causes a rapid growth of local lesion and early metastases.

A painless mass in the upper cervical region, or over the carotid bulb, may be a metastasis from an apparently insignificant cancer of the tonsil. This manifestation is often associated with the transitional cell or lymphoepithelioma type of tonsillar cancer. This type of metastasis is frequently missed under the diagnosis of "abscess," with only a casual examination of the oral cavity. When no pus is found, a tumor may be suspected, and then the patient is referred for further examination and diagnosis. Such a procedure tends to spread further metastases, allows fungation through the wound, and makes the treatment more difficult and less efficacious.

The clinical signs of tonsillar carcinoma are usually quite typical, but not routinely so. A microscopic study is sometimes necessary. The more usual type of lesion may be described as an ulcerated growth of varying size of tonsil or pillars, or both. The periphery of the ulcer is elevated, in-

durated, and irregular. The induration often extends into adjacent tongue, the soft palate, and occasionally on to the buccal mucosa, or floor of the mouth. The surface of the ulcer may be clean and granular, or the crater may be infected and sloughing. This appearance belongs to the more adult cell type of cancer; the transitional cell carcinoma and lymphepithelioma are nonulcerated in the early stage and may be overlooked unless a most careful search is made, even though there is in the cervical region a bulky growth of proved histology.

The differential diagnosis does not entail the consideration of many diseases of this region. The differentiated cell type might be simulated by lues or tuberculosis, though such confusion is unlikely. The radio-sensitive, nonulcerating lesion may have the appearance of a hypertrophied tonsil, or more likely tonsillar lymphosarcoma. The consistence of the embryonal type of tonsillar carcinoma is not characteristic: the induration which is often considered typical of cancer is frequently lacking in transitional cell carcinoma and lymphepithelioma. The cervical metastases from a very small embryonal carcinoma may be similar to cervical Hodgkin's disease, though distribution of the adenopathy may be helpful (in Hodgkin's disease the adenopathy is usually general).

The region of the anterior tonsillar pillar is a possible site for an adenoid cystic carcinoma. This lesion often can be distinguished clinically by the absence of ulceration, and its consistence, which is that of encapsulated fluid under tension.

Other types of tonsillar tumors are so rare that they need not be considered in the differential diagnosis.

Tonsillar carcinoma is most frequent in the fifth and sixth decades, but it may occur at any age. The oldest patient was eighty-two and had a squamous carcinoma, Grade II. The youngest patient in this series was twenty-one. He had a transitional cell type carcinoma, Grade III, radiosensitive. There was bilateral cervical involvement. For nine months this patient had noted a swelling in his neck, and the mass had been incised and drained before admission to the hospital for treatment.

The surgical treatment of cancer of the tonsil has been most discouraging. Because of the poor results, there have been very few reports. Matthews (1912) did not have any three-year cures by tonsil-

lectomy and cautery, or by excision of growth by a lateral pharyngotomy. In 35 cases of lateral pharyngotomy collected by Matthews, there was a primary mortality of 13 per cent, another 30 per cent died within six months, and only 4 patients lived two years. There have been a few reports of single successfully operated cases, but these are of no value, unless it is known how many cases were treated.

In very few clinics are carcinomas of the tonsil subjected to surgery. When this is done, it is usually on the mistaken diagnoses of a benign lesion. Carcinoma of the tonsil is nearly everywhere—as is the case at Memorial Hospital—classified as a primarily surgically inoperable disease.

Since tonsillar carcinoma is not a surgical disease primarily, it cannot be divided into operable and inoperable groups. In this report those cases in which only two contiguous portions of this region are involved, as tonsillar and anterior pillar, are classified as early, unless there is widespread disease across the base of the tongue, for instance, in which case the disease is classified as advanced, as it is if three or more portions of the mouth are involved; as tonsil, anterior pillar, and soft palate, or anterior pillar, adjacent tongue, and floor of the mouth.

Of the 176 cases in this report, only 40 were classified as early, while in 136 cases the disease was advanced. In these 136 advanced cases are included 10 recurrent cases, in which tonsillectomy had been done elsewhere.

Several cases were included in the early group, even though cervical metastases were present, the reason therefor being to emphasize the fact that small primary lesions may give rise to metastases. If only those cases were considered early, in which the primary was limited to two contiguous regions, and at the same time showed no cervical involvement, there would be only 15 early cases, or 8.5 per cent.

In the histologic grading of the carcinomata of the tonsillar region, they were found to be as follows:

Grade I.....	8 per cent
Grade II.....	72 per cent
Grade III.....	5 per cent
Transitional and lymphepithelioma..	15 per cent

In 4 cases the section was too small to grade, and in one the characteristics were mixed transitional and squamous carcinoma, Grade II. Only one adenoid cystic epithelioma was found in the whole group

of 176 tonsillar neoplasms. This man, fifty-nine years old, failed to return after three years and two months, at which time he was free of disease.

Cervical metastases from carcinoma of the tonsil are frequent and usually early, especially in the transitional cell type and lymphepithelioma. The metastatic mass in the cervical region is often the manifestation of the disease which causes the patient to seek medical attention. Some of these masses have been incised under the diagnoses of abscess. This is most hazardous, because it may cause distant metastases, and permit fungation of the tumor through the incision wound.

In this group of 176 cases, 64 patients did not have cervical metastases when admitted to the hospital (36.4 per cent). New and Childrey, in 1931, reported 32.2 per cent of the tonsillar carcinoma patients had no palpable nodes on admission to the Mayo Clinic, but no mention was made of what proportions of the remainder were operable and inoperable. Of the 64 patients admitted to Memorial Hospital without palpable nodes, 18 developed cervical metastases (28 per cent), but 3 developed inoperable nodes, either too widespread unilaterally for operation, or on both sides of the neck. Forty-five cases had operable nodes on admission, and 67 patients had advanced inoperable metastases (25.6 and 38 per cent, respectively). The criteria on which these figures are based are those of any surgical clinic where operability depends on the technical possibility of surgery, rather than on the more rigid rules which are followed at Memorial Hospital. We add other criteria to the operable group, which places technically operable nodes in the inoperable class. This will be discussed under Treatment.

It is interesting to note the frequency of involvement of the opposite side of the neck and of both sides. Fourteen patients had nodes on both sides on admission; 5 having metastases on the same side as the lesion, promptly developed nodes on the opposite side, and 3 patients had cross metastases when first seen. The 17 patients with bilateral neck involvement, or cross metastases, which are practically the same, accounted for nearly 10 per cent of all cases admitted. If to these are added the 5 who developed metastases, then 12.5 per cent of the whole group had bilateral metastases. This shows the frequency of this type of metastases, which is exceeded

only by carcinoma of the soft palate, which is a mid oral lesion and might be expected to extend to both sides of the neck.

Besides the local metastases, carcinoma of the tonsil may metastasize to the mediastinum, lungs, liver, retroperitoneal glands, and to the bones. These more distant deposits are common to the more malignant types, especially the transitional cell carcinoma and lymphepithelioma.

The discussion of the treatment of carcinoma of the tonsil will be limited to the method used in this group, and thereby may serve for a comparison with the group now being treated by more vigorous external irradiation, in divided dosage, somewhat modified from the so-called Coutard technic. This consists of 300 or 350 r. of x-radiation to right and left neck, alternately on successive days, until a total dosage of 3,000 to 3,500 r. are delivered over each point in twenty days. The factors of this x-radiation are 200 K.V., 30 ma., 60 cm. T.S.D.,  $\frac{1}{2}$  cu., 2 al. filtration, and the size of the portal is usually 7.5 cm. Interstitial radiation is reserved for any residual disease.

The treatment of the cases here included may be simply outlined, omitting the more detailed description. On admission both sides of the neck were exposed to x-rays, or radium, or both, the beam of radiation being sufficiently large to include the primary lesion. The group of cases treated in the early days received mild erythema to each side of the neck; in the latter years, the dosage was higher, often producing desquamation. The exposure to radiation was given to each side on successive days. Then the primary growth was implanted with a varying amount of radon, depending on the size and its configuration. The patient was subsequently carefully observed, to note the regression of the primary lesion and the condition of the cervical region. Close observation of the primary is necessary to determine the course to be followed in the care of the neck. Neither surgery nor irradiation of the cervical region is indicated if the primary lesion cannot be controlled, and too frequently the primary neoplasms are uncontrollable. In this series 17 of those cases with no nodes on admission died of uncontrolled primary lesions, as did 7 patients with operable cervical metastases.

If the primary growth regressed satisfactorily, and no nodes were palpable in

the neck, special attention was directed to the detection of metastatic nodes. No surgery was done nor further radiation given unless indicated by the development of metastases. If operable nodes developed or were present on admission, a neck dissection was done when the primary lesion was healed or controlled. When a neck dissection was indicated, a complete dissection was done removing the jugular vein, sternomastoid muscle, and the contents of both anterior and posterior triangles of the neck. To be operable, it is not sufficient for the nodes to be technically resectable, but they must also be metastatic from an adult type of tumor, as shown by the biopsy of the primary growth. Metastases from transitional cell carcinoma and lymphepithelioma are never subjected to surgery. If external irradiation was inadequate to devitalize the cells, the mass was implanted with gold tubes of radon, either following surgical exposure or directly through the skin. This same procedure was followed in the technically inoperable group of more adult type of tumor, surgically exposing the less advanced lesions, and directly implanting radon seeds into those masses in which only mild palliation may be obtained. It must be understood that the previously described technic of treatment is applicable to this group of cases and is not the principle being followed at present which is based on delivery of greater amount of radiation by external means over a protracted period, utilizing interstitial for any residual disease.

It is not customary to report three-year cases of carcinoma, but since Berven, in his extensive study of tonsillar carcinoma, has reported three-year results, the same time interval will be used in this discussion.

Berven divided his cases into two groups: one comprising the 28 patients treated between 1919 and 1924, by what he calls the "old technic." This consisted of x-ray to each side of the neck with large portals, the fractionated dosage varying from  $\frac{1}{3}$  to  $\frac{1}{2}$  S.E.D. daily to alternate sides of the neck, to total about six to seven S.E.D. After this series of treatments, radium was applied to the surface of the primary tumor.

With this method of treatment no patient lived symptom-free for three years.

The second group of 18 cases, 1923 to 1927, was treated by the "new technic," consisting of radium irradiation at a longer

target skin distance, directed toward the primary lesion from four angles, namely, over tumor, from opposite side of head, from posterior portal, and finally over the face on the side of the tumor, a total of 80,000 mg. hr., the dosage varying over different portals. The amount of daily dosage was 6,000 mg. hr. The primary tumor was then treated by surface or by interstitial application of radium. In this group of 18 cases, 7 remained free of disease for three or more years, a percentage of 38.9.

This report comprises 176 cases between 1921 and 1930, inclusive. Of the 46 patients who had no cervical nodes throughout their course, 15, or 32.6 per cent, remained free of disease for three or more years. Others died of uncontrolled primary lesions, distant metastases, local infection, intercurrent disease, or were lost. Of the 18 cases who developed neck nodes after admission, 5 remained free of disease for three years or over, a percentage of 27.7.

The presence of operable metastatic nodes decreased the percentage to 15.5, only 7 out of 45 patients surviving free of disease for a period of three or more years. In the large group of 67 cases admitted with inoperable cervical nodes, only 5 survived the three year period clinically free of disease (7.5 per cent). The 3 patients lost after a period of observation of three years, though free of disease at the time, have not been included in the three-year tabulation of results. The reason for this is that most of the well patients have been free of disease for longer than three years, some for nine or ten years.

If the 176 cases are included in a composite tabulation, it is found that there are 32 patients clinically free of disease for three or more years (18.1 per cent).

This figure is unsatisfactory; nevertheless, it encourages us to persist in our efforts to improve the technic and results of radiation therapy in tonsillar carcinoma which is rarely, or never, suitable for surgery alone.

#### DISCUSSION

DR. DOUGLAS QUICK: The subject which Dr. Duffy has so ably presented ought to be of widespread interest. Peculiar and often insignificant lesions in and about the tonsillar fossa are frequently overlooked from the cancer standpoint. It is possible that the frequency of ulcerating inflammatory lesions on the surface of the tonsil may lead to this confusion on the part of the general practitioner or the nose and throat



specialist It is a fact, also, that relatively few tonsils are examined histologically after tonsillectomy

The doctor's percentage incidence of tonsillar fossa cancer seems to me rather high, yet it does indicate that growths in this area are not rare. Dr. Duffy's figures are taken from a department which has enjoyed a substantial popularity over a period of many years in an institution where certain of the major types of cancer are not cared for in such large numbers.

While the metastatic cervical nodes are frequently the first noticeable indication of real trouble, this evidence of late recognition is not as frequent with the tonsillar group as with those primary in the nasopharynx

Emphasis should be placed upon the fact that this group of tumors is strictly nonsurgical from the standpoint of extirpation Technical operability and real operability in cancer are two different things

Dr. Duffy's high percentage of histological Grade II cases should be of particular interest to the radiologist. They represent the group of cases that are on the borderline of controllability by intensive external irradiation The initial response to heavy modern external therapy is likely to be misleading If left to this alone, recurrence may be expected after a few months

in many instances. The majority of these cases are handled with greater safety by combined external and interstitial irradiation

I feel that the present wave of popularity of the so called "Coutard technique" is likely to leave, ultimately, many unnecessary failures in this group Dr. Duffy's percentage of strictly anaplastic growths (about 15 per cent) fits very closely with the clinical experience of the percentage of these cases controllable by external therapy

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2 W 106TH STREET

#### PREVENTIVE MEDICINE PAYS

It pays in cold cash This is the discovery of a committee of the Michigan State Medical Society that has been looking into the monetary side of preventive medicine The committee says plainly that a satisfactory way to enhance the monetary return to the physician is to increase his services in the preventive field When in good health the patient is more inclined and better able to pay for medical services

The truth of this statement is borne out by experience in Detroit, where during the past three years, due to the reduction in the diphtheria death rate, it is estimated that the physicians of the community have lost \$60,000 This figure is based upon an assumed cost of \$35 for each case of diphtheria treated This loss would have accrued to the medical profession irrespective of whether free clinics were employed as a means

of immunizing children of susceptible age or whether a program of medical participation had been adopted Under the latter plan, however, the physicians have received, either through payment direct by the parent or through an honorarium provided by the Health Department, more than \$300,000

In other words, medical service has paid this group of 1,100 cooperating physicians five times as much as they have lost in curative medicine. This demonstrates very distinctly that to the physicians preventive medicine is more profitable than curative medicine.

At the same time the public has gained The average cost of a case of diphtheria is \$35, the average cost of preventive but \$3 Again the advantage in favor of preventive medicine is more than ten to one.

#### \$3 TO REPAIR A BROKEN HEAD

A double interest attaches to the following item It is an English surgeon's bill of 1689, showing that his charge for repairing a broken head was 10 shillings or \$2 50, for medicaments, and 2 shillings, or 50 cents, for his own services The second interesting point is that it was found in a London paper by Dr. James Vander Veer, who sent it to Dr. J. S. Lawrence, Executive Officer of our Legislative Bureau, who sent it to Dr. Peter Irving, of the Journal Management Committee It is this sort of reader interest and cooperation that will make any magazine like our JOURNAL truly successful The good surgeon's bill runs as follows: Semptemb ye 22, 1689 T Edgsaw a Coachman sore wounded on the head, the Cranium bare, the breadth of Crown peace fell into my hand—Charges Melrosarium two shillings and sixpence, Spirit of

Wine three shillings, Brandy one shilling; Plaster one shilling and sixpence, towe (tow?) to dress sixpence, fomentation two shillings, for own paines nothing, for my servants two shillings total twelve shillings and sixpence Received the Some in this Bill by mee Thos Wotton.

A whimsical writer in the *London Punch* observes that psycho analysis which is easier to understand than to spell tells us what we really think when we think we think a thing Without psycho-analysis we should never know that when we think a thing the thing we think is not the thing we think we think, but only the thing that makes us think we think the thing we think we think.

## SPUTUM EXAMINATIONS AND THE PRACTICING PHYSICIAN

ROBERT E. PLUNKETT, M.D., and N. STANLEY LINCOLN, M.D.

*From the Division of Tuberculosis, State Department of Health, Albany*

Etiologically, diagnostically, prognostically, and epidemiologically, the tubercle bacillus is the one important factor around which all branches of phthisiology revolve. Nevertheless, it is astounding that of 65,335 reports of pulmonary tuberculosis received by the New York State Department of Health in the past nine years, less than one-half (about 45 per cent) of the cards showed that the patient had had a sputum examination.<sup>1</sup> Even though 75 per cent were in the advanced stage at the time of reporting, only 34 per cent were reported as having a positive sputum. Obviously, this does not truly represent the facts. If from the total reports is subtracted the group received from physicians associated with tuberculosis hospitals (about 47 per cent of the total), both the relative number and percentage of patients having had the sputum examined, as reported by the local physicians, become increasingly small. Whatever the explanation of this situation may be, immediate correction is essential for the common good.

Even though the death and morbidity rates for tuberculosis have been declining steadily for several years, the percentage of cases reported as the pulmonary form has shown a slight increase. In other words, there has been a more rapid actual and relative decrease in the number of extrapulmonary tuberculosis. The significance of this observation is that the sputum has become the most important vehicle for the transmission of the tubercle bacillus. Any intelligent program of tuberculosis control from the point of view of the patient, the physician and the community, must be based upon an accurate knowledge of the bacillary content of the sputum. This knowledge can only come by adequate sputum examination in a well-equipped and staffed laboratory. Official public health agencies consider the laboratory of such vital importance as an adjunct in the control of communicable disease, that the expenses of some laboratories in New York State are paid either in part or wholly from public funds. The cost to the individual practitioner of examination by these laboratories is nothing, except the postage for the specimen submitted and the time to fill out a form for the guidance of

his technical coworker. The steadily increasing number, delicacy, and reliability of examinations offered, justifies this confidence.

In the application of the fundamental principles of communicable disease control to tuberculosis, the significance of sputum and its examination deserves first consideration. If a patient has an amount of sputum greater than the normal secretions, it is *prima facie* evidence that there is a morbid process somewhere in the respiratory or upper respiratory tract including the mouth. If the lesion be hidden from direct view, particularly if it be intrapulmonary, the examination of sputum may tell the examiner the etiological factor, and not infrequently the evolution of the lesion. One may inquire why it is essential to examine sputum for tubercle bacilli, when there are present no etiologic symptoms or signs and sputum has been present for a short period. "The answers are that clinical experience shows that some of these cases of recently manifested and apparently trivial disorders are really cases of tuberculosis of the lungs which are in such an early manifestational state, that no symptoms, especially suggestive of tuberculosis of the lungs exist. . . ." (Shaw<sup>2</sup>). From a point of view of diagnosis, the demonstration of tubercle bacilli in the sputum is the only method of unequivocal value. All other tests or examinations belong in the field of presumptive evidence.

There is an attitude among practitioners and some laboratory workers that it is a greater tragedy to make a wrong positive diagnosis of pulmonary tuberculosis than to miss the diagnosis when tuberculosis is actually present. This attitude should be challenged. If a person is incorrectly diagnosed tuberculous, the injustice is minor, for the reason that only an incorrect name has been applied to a morbid process, the diagnosis can be readily corrected and the error is never a cause of death. On the other hand, if a diagnosis is not made in the presence of active disease, the patient not only may be robbed of his opportunity for successful treatment, but also in ignorance is transmitting to his contacts and family the seeds of disease which, in turn, may lead to a tragic end.

From the point of view of guide for therapy, the physician must know whether the sputum contains tubercle bacilli constantly or intermittently, and in gross or occasional numbers. It is common clinical experience that patients with a persistently positive sputum over a prolonged period do poorly. One of the aims of present-day treatment, especially those forms based on the principle of collapse of the lung, is to render the sputum bacilli-free and the patient sputum-free.

From the point of view of public health, we know that the tuberculous individual may be either a definite clinical case or he may be without symptoms and yet have bacilli-laden sputum. In a practical sense, this latter individual is a "carrier" and is difficult to control because of his apparent wellbeing. Even though a person is the source of infection, the sputum is the vehicle of dissemination and control must be aimed at the proper disposal and control of this vehicle. "By removing the source, the infection rate diminishes and the disease tends to disappear."<sup>3</sup>

In other words, one of the most important steps in the diagnosis of the presenting case, in determining the proper course of treatment in the diagnosed case, and in the solution of the tuberculosis problem in any community, is adequate sputum examination.

Of what does an adequate sputum examination consist? It consists of the following steps:

1. Adequate samples correctly collected in appropriate receptacles.

2. Examination by direct smear of carefully selected portions of specimens collected on several consecutive days. If these are negative, or especially, if the amount of sputum is small, a three-day specimen should be collected and examined by smear. If, in turn, this is negative, then

3. Concentration of either single or three-day specimens by any of the accepted methods and study of the sediment by: (a) Direct smear; (b) Culture on artificial media; and/or (c) Inoculation into a laboratory animal, preferably the guinea pig.

The need for the submission of an adequate number of specimens cannot be overstressed. Cultural and animal studies are time consuming and expensive, but this consideration should not deter the physicians in their use when properly indicated.

In order to obtain the maximum information, the specimen must be endowed with those characteristics which are translatable by technical methods to useful data. More likely than not, the patient is totally ignorant of medical terms even to the point that he may not realize that he has

"sputum" or "expectoration." In fact, the less the store of a patient's knowledge, the more necessary it becomes to explain in detail what is desired. Saliva, nasal and nasopharyngeal secretions, and foreign material of no medical interest, only serve to complicate the problem of the technical observer. Only that material which is coughed up "from the lungs" or "bronchial tubes" is useful for examination. If necessary, in order to obtain an adequate amount, such material may be collected for a period of one to three days.

A receptacle for the collection of sputum specimens is usually of glass, of one-ounce capacity, and so designed that it is easy to expectorate into without soiling the exterior. These should be furnished by the laboratory. Perhaps it is not sufficiently recognized that acid-fast bacilli of the air, dust, hay and straw, butter, and those found in the average cold-water tap are not pathogenic for man but may lead to false report if not guarded against by appropriate methods. Moreover, certain fats and oils should not come in contact with the receptacle because they may render nonacid-fast bacteria definitely acid-fast. These and other common sources of error and their prevention are common knowledge to well-trained technical workers and in well-run laboratories.<sup>4</sup>

The method of examination of an untreated specimen of sputum by direct smear has a large percentage of error even when the maximum skill is used. The tubercle bacilli occur in unevenly distributed clumps and their inclusion in the droplet examined (estimated at 1/100 c.c.) is a matter of chance.<sup>5</sup> Whether we accept Corper's estimate of 100,000 bacilli per cubic centimeter or Woolley's estimate of 5,000 per cubic centimeter necessary for consistent positive smears, it is obvious that many specimens of sputum may be repeatedly negative by this method and still contain significant numbers of tubercle bacilli, particularly when it has been demonstrated that 10 to 100 bacilli may produce progressive disease in guinea pigs in two months.<sup>5, 6, 7</sup> A sputum cannot be considered negative for tubercle bacilli, therefore, until it has been studied by more accurate methods.

The next step is the "concentration" or "enrichment" of the sputum specimen. The object of this procedure is to render the soluble portions of the sputum readily fluid so that the insoluble portion (of which tubercle bacilli are a part) may be gathered into a small volume which is more easily and effectively searched. It is at this

point that the value of proper collecting of specimens shows greatest technical results.

This method was first developed by Biedert,<sup>8</sup> in 1886, when he boiled the sputum with sodium hydroxide. Uhlenhuth,<sup>9</sup> in 1908, developed the well-known antiformin method of concentration. Petroff,<sup>10</sup> in 1915, used dilute sodium hydroxide and Löwenstein<sup>11</sup> and Sumiyoshi,<sup>12</sup> in 1924, used dilute sulphuric acid. Each of the last three methods have their proponents, but the last two appear to be most useful when the sediment is to be cultured on artificial media or inoculated into the laboratory animal. The reason seems to be that they are the most efficient in killing contaminating organisms so plentiful in sputum and at the same time doing the least damage to the viability of the tubercle bacilli. The development of the concentration idea has been one of the most significant advances in the examination of the sputum in the past twenty-five years.

If, upon microscopic examination of the sediment of a concentrated specimen, bacilli are found which are morphologically identical with tubercle bacilli, this observation should be confirmed by repeated examination of an additional specimen or specimens, or by bacteriological culture, and/or animal inoculation. No definite diagnosis, either positive or negative for tuberculosis, should ever be made when the morphology of the acid-fast organisms seen are not typical of tubercle bacilli. If the forms are atypical, further study is not only indicated but highly essential.

The artificial media to be preferred is that which gives the best results in the hands of the technical coworker. The number of media in current use is legion and the literature fails to reveal that any one has a definite universal superiority. Culture methods have demonstrated tubercle bacilli in as high as 71 per cent of sputum from a series of 100 patients, which had previously been negative by direct smear for a period of four months to two years.<sup>13</sup> If typical colonies appear from which smears show acid-fast rods

morphologically identical with the tubercle bacillus, then a diagnosis of positive is amply justified.

The most reliable method for the demonstration of the tubercle bacilli is freely admitted to be animal inoculation. Therefore, this method is to be preferred, especially where other tests do not yield definite results and whenever it is desirable to know the relative virulence and the type of the organism concerned.

A comparison of the cultural and animal inoculation methods for the isolation and identification of the tubercle bacilli is most interesting and instructive. In order to obtain a "certified" diagnosis of tuberculosis one must follow through the three postulates of Koch which involves the use of both methods.<sup>5</sup> In practice, Sweany and Stradnichenko<sup>14</sup> found that practically every patient remains positive by culture and animal inoculation a few months longer than by the direct examination and that a few patients are found who were always negative by the microscopic examination of the concentrate. The culture method is cheaper, quicker and is not subject to the vicissitudes of laboratory animals. However, the laboratory animal, especially the guinea-pig, is not susceptible to the contaminants usually found in sputum, gives an idea of virulence of the organism, and, in general, still remains the court of last appeal in the isolation and identification of the bacillus tuberculosis.

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#### ANNOUNCEMENT

The Radiological Society of North America will hold its next Annual Meeting at the Hotel Peabody, Memphis, Tennessee, December 3-7, 1934. The Medical Profession is cordially invited to attend. Further information may be obtained by addressing the Secretary-Treasurer, Dr.

Donald S. Childs, 607 Medical Arts Building, Syracuse, New York.

DR. A. L. L. BELL, BROOKLYN, N. Y.

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Counsellors.

## A STUDY OF 1,250 BASAL METABOLISMS DURING PREGNANCY

### *Clinical Presentation of Cases*

EDWARD C. HUGHES, M.D.

*Syracuse*

One of the most interesting studies in obstetrics to-day is that of the glands of internal secretion. These structures present vast material for speculation. It is considered that the pituitary, thyroid, pancreas, adrenals and ovaries are more closely related to pregnancy and the sexual life of woman. It has been thought that these glands may cause changes in the metabolism of the body at that time.

It is the purpose of this article to present a study of 1,250 basal metabolisms done during pregnancy. No claim is made of any striking discoveries, or of conclusive inferences that may be drawn, because the series is small. However, it is felt that the study will bring out some interesting data, and may help to clear up some of the questions about metabolism during those months.

This study began four years ago and consists entirely of private patients. Because the metabolic machine is rather a crude instrument and because the chances of error are considerable, every effort was made to approach basal conditions as nearly as possible. The tests were done by a well-trained technician, the patients were well-informed about the tests, and the element of apprehension reduced to a minimum.

The first problem was to attempt to establish a normal of metabolic readings throughout pregnancy. This was difficult because of the numerous factors constantly influencing the individual. The change in the endocrine function, the growth of the fetus, and many other things had to be taken into consideration. The most important of these things were the increasing weight, the diet, the exercise, the age, the height, and the atmospheric changes. No doubt, also, sectional changes in various parts of the country may alter the normal metabolism. All of these patients were on a high carbohydrate diet in the first trimester, balanced diet in the second trimester, and a low fat and moderately low protein diet in the last trimester. The exercise was limited in the first three months to housework, and in the second

trimester the patient was encouraged to walk two miles a day.

The first manner of establishing a normal was as follows: The average conditions which prevailed during all these tests were taken as a basis, and therefore a synthetic woman was metabolized each month of pregnancy under average conditions, and a curve plotted. The second way was to aggregate in each month all the tests done, and the mean of these was taken as a normal. The third way was to accept the standard already established for everyone, and to choose plus 10 and minus 10 as normal limits.

It was found that 56 per cent of these patients were within these normal limits in the first trimester, 71 per cent in the second trimester, and 75 per cent in the last trimester. In analyzing the curve it can be seen that there is a slight increase at the sixth week of pregnancy; a lowering in the second, third and fourth months, the lowest being in the third month; and then a gradual increase until it reaches a plus in the last trimester. Also, it is noticeable that 77 per cent of these women showed a rate below zero in the second, third, and fourth months; 68 per cent in the fifth month; 60 per cent in the sixth month; 39 per cent in the seventh month; 26 per cent in the eighth month; and 17 per cent in the ninth month. This is somewhat contrary to the literature, most of which states a plus rate throughout the entire pregnancy. This is represented graphically in Plate I.

The lowering of the rate found in the third and fourth months particularly has also been mentioned by Rowe and associates of Boothby at the Mayo Clinic. After reviewing this curve it appears that in the majority of cases, pregnancy has no great effect upon the general metabolism except to cause these changes. However, there is a definite percentage of cases that have shown marked changes, and it is this group of women that have most engaged our interest.

In order to bring out more of the clinical side, an attempt has been made to find

out if any of the symptoms and signs associated with various stages of pregnancy are in any manner related to the change of metabolic rate from normal. Patients presenting these irregularities constituted 44 per cent of those examined in the first trimester, 29 per cent in the second trimester, and 25 per cent in the third trimester. These peculiarities were unusually high or low rates, those having a sudden lowering of fifteen or more degrees, and those who failed to increase with pregnancy.

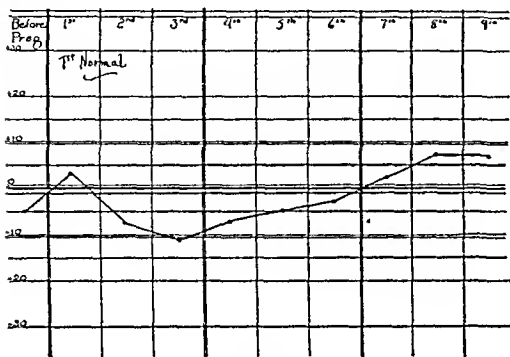


Plate I

Case 150	Below -10	+10	Above +10	Decrease of 15 Points or more
Loss of Wt	53%	33%	22%	90%
Anorexia	85%	45%	5%	92%
Drop in BP				
Mod Nausea	81%	35%	5%	94%
Severe Nausea	41%	83%	0	50%
Mod Vomiting	81%	18%	5%	94%
Severe Vomiting	19%	83%	0	44%
Constipation	74%	28%	22%	
Exhaustion	80%	51%	32%	

Plate II

During pregnancy, which has been divided into three parts—first, second, and third trimesters—certain conditions stand out as characteristic of each. The period that presents the most complaints is the first trimester. This period may be thought of as the destructive period, the patient rarely showing stimulation at this time. The most frequent signs and symptoms are extreme exhaustion, sleepiness, nausea and vomiting, constipation, anorexia, loss of weight, and general slowing of the entire system. During this period, 165 patients were studied and metabolized. These cases have been divided into four groups, those above plus 10, those between

plus 10 and minus 10, and those below minus 10. The women showing a sudden drop in metabolic rate of 15 or more points constituted the fourth group. These changes took place regardless of the previous level of metabolism.

Plate II presents percentages in 150 patients who exhibited these symptoms.

It appears then that patients with a rate below the minus 10 level, patients developing a decrease in rate whether it be in the first or second trimesters, present the most difficulty.

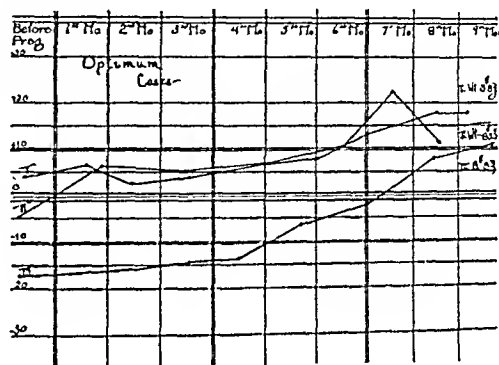


Plate III

The optimum patient then would be as represented in the three graphs in Plate III.

(1) Mrs. T., age 28, came to the office before pregnancy for an examination, at which time her metabolic rate was plus 4. Two months later she returned pregnant and her rate had increased to plus 6. There was then a slight lowering, followed by a gradual increase until she reached a plus 14. She had no complaints and there was no change in the blood pressure, 110/80.

(2) Mrs. H., age 23, first baby died in utero from twisted umbilical cord. Rate two months before pregnancy, minus 5. There was a definite increase in rate from the beginning and no symptoms developed. Blood pressure was 120/80.

(3) Mrs. Z., age 27. Rate before pregnancy was minus 17. At two months pregnant, the rate remained stationary. She felt well except for malaise, loss of 8 lb. weight in the first trimester, and blood pressure of 90/70 at that time. After the fourth month, stimulation took place followed by increase in rate and general improvement.

The less favorable cases are those showing a drop in rate, and are illustrated by the following two cases, Graph I and II in Plate IV.

(1) Mrs. R., age 33, sterile seven years. After lipiodol injection of the uterus, patient menstruated once and then became pregnant. Before pregnancy, basal metabolism was plus 13. At the sixth week there was quite an increase, and with this increase the patient was irritable, nerv-

ous, had mild tremor, and increase in pulse rate. The second month the basal metabolism began to drop, first to plus 8 and then to minus 3. With this change, symptoms began to develop and nausea and vomiting were continuous and severe. Blood pressure dropped from 130 to 100, there was a 6 lb. loss of weight, and the patient became extremely sleepy. From the fourth and fifth months to the eighth month there was a slow increase in basal metabolism, blood pressure and weight, and the signs and symptoms abated.

(2) Mrs. O., age 32, showed a basal metabolism of minus 2 before pregnancy. She felt well until the second month when nausea and vomiting became very severe, lasting all day and night. There was a lowering of rate until the third month when it was minus 10 and the symptoms were much worse. The constipation was marked

lack of it, but probably to general glandular changes.

Many statements have appeared claiming that patients with hypothyroidism are prone to miscarriage, this diagnosis being made on the low rate entirely. Thirteen patients having miscarriage were tested. Ten patients had minus rates ranging from minus 25 to minus 1. Three patients had rates from plus 6 to plus 12. It was noted that in two patients with rates of minus 25 and minus 15, respectively, the ovum had failed to acquire growth of more than six to eight weeks although both were thought

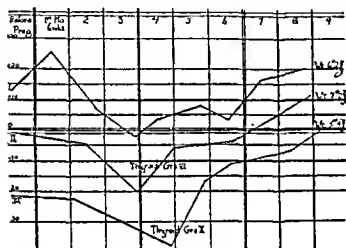


Plate IV

and quite a problem. In the fourth month she was given thyroid extract. There was an improvement, which may or may not have been due to the extract.

The least favorable of all cases is the patient beginning with an unusually low rate and dropping lower, represented by Graph III in Plate IV.

(3) Mrs. M., age 26, sterile three years, irregular periods, malaise and constipation. One year prior to pregnancy, metabolism was minus 21. Upon treatment, rate increased only to decrease some months later. When next seen, she was three months pregnant. She had lost 22 lb. weight in the three months, was dehydrated, weak, exhausted, continually nauseated and vomiting, almost obstipation, and blood pressure was 80/70. Her rate had dropped to minus 41. She was given sugar solution, high carbohydrate diet and thyroid for the remainder of her pregnancy, and after several weeks improvement began.

It seems that if a general stimulation occurs as denoted by an increased rate, weight, and tone, symptoms are less likely to occur; that the lower the rate without increase, the more possible for symptoms to occur; and, finally, that sudden dropping of the rate is associated with development of symptoms. These changes are not necessarily due to thyroid gland activity or

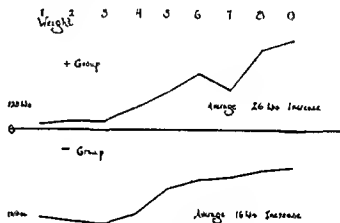


Plate V

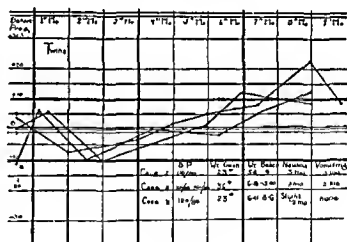


Plate VI

to be three months pregnant. There were two patients with missed abortions, one with rate of plus 26, and the other minus 10. One patient with hydatidiform mole was metabolized when first seen in the fourth month of pregnancy. She was in a severe degree of dehydration and acidosis. Vomiting had begun at six weeks, was continuous, and was gradually increasing. The loss of weight was 20 lb. and the blood pressure was 90/70. Aschheim-Zondek test was positive with 1/150 c.c. of urine. This patient had not been metabolized be-

fore pregnancy, but when metabolized one year later was minus 12.

During the second trimester, which is perhaps the uneventful period of pregnancy, 155 cases were studied. Twenty-five cases showed a decrease in rate, while 18 had practically no change. The remaining showed a gradual increase, and with this progression had a general improvement in their physical and mental condition. In those 25 cases of decreased metabolism, and likewise in those 18 cases of stationary metabolism these improvements were slower to develop. During this trimester some patients showed a tendency toward unstable metabolism. This was indicated by the patient suddenly becoming extremely nauseated, followed by violent vomiting. Several cases had to be taken to the hospital and treated for acidosis. In all these patients there seemed to be an associated drop in the metabolic rate prior to the

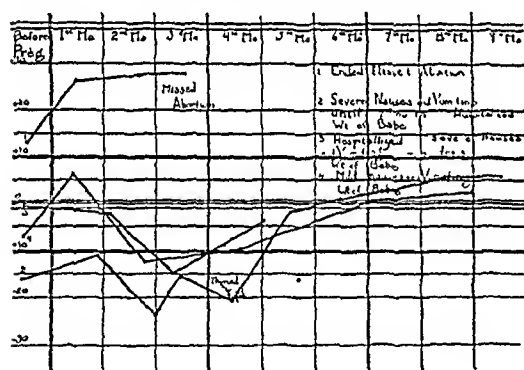


Plate VII

period of acidosis, and all were definitely the type of individuals having low rates. This condition is very apt to occur just before or during the time of the month that a menstrual period would ordinarily be due.

During the prenatum, weight changes were interesting. It was noted that the average gain for all cases was 22 lb. The group below minus 10 at the beginning of pregnancy showed an average loss of 2 lb. in the first trimester, a gain of 11 lb. in the second trimester, and an increase of 3 lb. in the third trimester, making an average of 16 lb. increase throughout. In the plus rate group, there was an actual increase in the first trimester, a gain of 11 lb. in the second trimester, and an increase of 11 lb. in the third trimester.

Weight increase in the mother in respect to the time of fetal growth is of interest.

In the plus group, the greatest weight increase took place in the last trimester, although an average of babies' weight for this group was 7 lb. 4 oz. In the minus group, the greatest increase occurred in the middle trimester, and the average babies weight was 7 lb. 9 oz. In these cases the mothers did not seem to gain as much weight on their bodies. (Plate V.)

The third trimester, the constructive period, the time of greatest fetal growth was studied. In most women pregnancy during these months has a stimulating effect. Intestinal absorption is certainly increased, weight is gained, the woman has a feeling of warmth, she has more ambition, and the blood pressure is increased slightly. During this time the toxemias are apt to occur and labor may begin prematurely. It was thought interesting to see if there was a greater tendency for these complications to occur in the minus group or in the plus group. There were 3 cases of toxemia in the plus group, one pre-eclampsia and 2 cases of chronic nephritis. In the minus group there were 5 cases of toxemia, one nephrosis, 3 pre-eclampsia, and one post-partum eclampsia.

Unusual condition of babies was noted as follows: In the plus group there was one malformed premature hydrocephalic child, and in the minus group 3 malformed children were born. All were premature and died. One mother whose metabolic rate steadily decreased through pregnancy delivered a Mongolian idiot with squinty eyes and thick tongue. This child improved on thyroid extract, but since has developed into a definite Mongolian idiot.

It seemed that in the plus group labor was tolerated better, there was less tendency for acidosis to develop during labor, and the general improvement afterward seemed faster. The average length of labor in the plus group was 9.2 hours, while in the minus group it was 12.5 hours.

The thyroid seemed to have the most increase in size in the plus group, and there was a tendency for slightly higher blood pressure readings. Although thyroid plays an important part in pregnancy and may be responsible for many conditions, it is not felt that the metabolic rate is an indication of thyroid function alone.

Included in this series are 2 patients who developed hyperthyroidism during pregnancy, 4 women that had had the thyroid removed prior to pregnancy, and 3 patients with twins.



It has been thought that the fetal tissue causes the increase in metabolism in pregnancy. Three cases of twins were studied and present the following curve: In all cases the abdominal distention was severe. The curve, however, seems to appear almost the same as the normal, with the exception perhaps of slightly more increase during the latter part of the second trimester and during the third trimester. (Plate VI.)

Women who have had their thyroids removed have always given the obstetrician considerable concern during subsequent pregnancies. Four patients with thyroidectomies were studied.

CASE 1.—The first patient had had her thyroid removed in stages at the age of 23. Shortly afterward she became pregnant. The pregnancy was normal. The patient had always retained some exophthalmos, mild nervousness, and tremor. Her basal metabolism was plus 14 just prior to her second pregnancy. When one month pregnant, the metabolism increased to plus 26 and remained high. (Graph I, Plate VII.) Blood pressure was 160/80. She felt well except for nervousness and loss of appetite. When she was three months pregnant she began to flow, and one month later had a missed abortion.

CASE 2.—Mrs. H. R., age 33, married ten years, first pregnancy eight and a half years ago. It was normal and without symptoms. Two years later, the patient developed severe hyperthyroidism. The thyroid was removed and was of the very active type. The patient then tried for several years to become pregnant. Her basal metabolism was minus 17. Graph II, Plate VII. Finally she conceived, and upon missing her first period extreme nausea began and she vomited continuously. Hospitalization was necessary and after intravenous glucose she improved enough to be allowed to return home, but symptoms continued until the sixth month. Thyroid was given from the fifth month on. She lost 7 lb. of weight in the first trimester, and there was a drop in blood pressure of 40 points. Blood sugar was 76 mg. Delivery and baby were normal. Plate VIII shows section of thyroid removed. Small follicles are present with columnar type of cell and vacuolization of colloid.

CASE 3.—Mrs. J. R., age 30. Thyroidectomy seven years ago. The first pregnancy two years later was uneventful except for nausea and vomiting throughout. Since the first pregnancy she had had irregular periods. Basal metabolism was minus 1. The second pregnancy occurred last spring. (Graph III, Plate VII.) As soon as the first period was missed, nausea and vomiting began. Metabolism was zero. When three months pregnant, she became violently ill, headache so severe that sedatives could not control it, vomiting continuous, and patient was hospitalized. Temperature was 102°F., pulse 120, blood pressure 90/70, urine acetone 4 plus, and blood sugar 77 mg. Metabolism had fallen just prior to this to minus 15. She was treated for acidosis and within a few days was able to go home. Metabolism, blood pressure and weight increased, and delivery and baby were normal. Weight of baby

was 7 lb. 5 oz. Plate IX shows section of removed thyroid. Follicles are somewhat larger than would be expected. There is considerable vacuolization.

CASE 4.—Mrs. S., age 37. First pregnancy ended in miscarriage; second was twins, one baby dying; third pregnancy was uneventful except for diarrhea and indigestion. Eight months after the third pregnancy, patient had a very toxic thyroid removed. (Graph IV, Plate VII.) Metabolism was plus 55. Four months later, she became pregnant for the fourth time, and was normal except for rather severe nausea and vomiting the first three months. She developed a real hypothyroid condition as indicated by symptoms and drop in metabolism to minus 22. Plate X shows section of removed thyroid. This thyroid was very active, showing a germinal center of lymphocytes. There was marked vacuolization of the small follicles with high columnar epithelium.

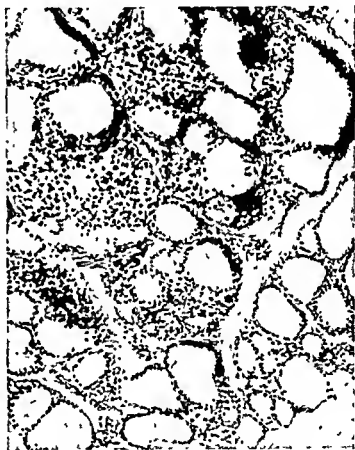


Plate VIII

Patients developing thyroid disease during pregnancy, or pregnant women with hyperthyroidism are rather rare. Two were seen during pregnancy, but unfortunately only one was metabolized as often as desired. The other was first seen when she was seven months pregnant. She was extremely toxic, having an associated pre-eclamptic toxemia. Metabolism at that time was plus 45. The heart was fibrillating, and blood pressure was 200 to 220. Labor began at seven and a half months, and a two-pound, ten-ounce baby was delivered. Six weeks after delivery, the metabolism had decreased to plus 18. Three months later, she again became toxic

with the usual signs of hyperthyroidism. Metabolism was plus 45, and the thyroid was removed. Microscopically it is shown in Plate XI. Section of adenoma of thyroid—adenomatous on left and thyroid tissue on right with mild activity.

The second patient had had an enlarged neck since childhood. During pregnancy it increased in size, and the metabolism increased to plus 17. She felt well and was not nauseated, but there were mild signs of hyperthyroidism such as tremor, pulse 100 to 120, and blood pressure 130/80. Three months after delivery the thyroid was removed, and pathologically showed (Plate XII) moderately active thyroid tissue, but not as active as would

was attempted. This showed a small increase at the sixth week, followed by a lowering in the second, third, and fourth months. Then there occurred a gradual increase to a plus quantity.

(2) Fifty-six per cent of all patients were within normal limits in the first trimester, 71 per cent in the second trimester, and 75 per cent in the last trimester.

(3) The optimum basal rate is one that begins between plus 10 and minus 10, and has a slow gradual increase.

(4) The less desirable cases are those that start below minus 10 and have a gradual increase.



Plate IX

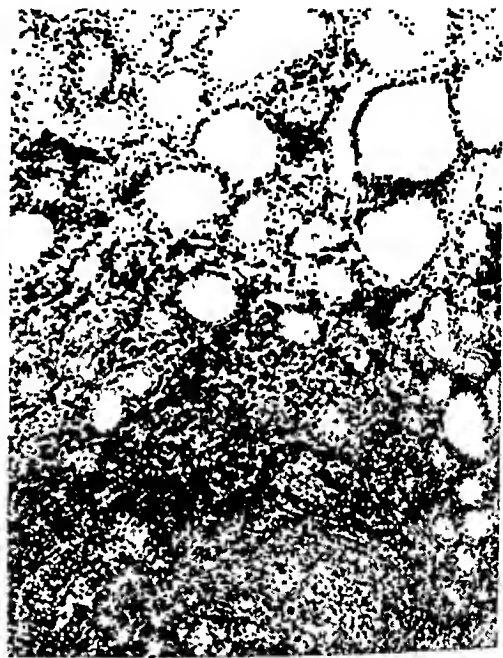


Plate X

be expected from signs and symptoms during pregnancy. Four months after removal, metabolism was minus 22.

The first case showed marked increase in thyroid in the last trimester. The second case also showed increased size of gland in the last three months, but not of as severe degree as the first case. Size of the first baby was 2 lb., 10 oz.; the second baby was 6 lb., 8 oz. Neither case had nausea or vomiting in the early months.

#### CONCLUSIONS

(1) After a study of 1,250 basal metabolisms, a normal rate during pregnancy

(5) The least favorable cases are the ones that are below minus 10 and continue to go lower, and those who have a drop of 15 points or more, no matter at what level they begin.

(6) Symptoms develop in a larger percentage of patients in the latter type of curve.

(7) In 13 cases of miscarriage, 10 patients, or 76 per cent, had a metabolic rate below zero. Four patients were below minus 10. This, however, does not mean much because 77 per cent of the normal patients presented levels as low.

(8) One patient with hydatidiform mole had a metabolism of minus 27, with severe nausea, vomiting, and acidosis.

(9) The second trimester presents fewer abnormal conditions, but patients failing to increase their metabolism are more prone to vomiting and acidosis.

(10) Maternal weight increase was greater in the plus group than in the minus group.

(11) Weight of babies was greater in the minus group than in the plus

(12) Average length of labor was longer in the minus group by three hours, and labor was not tolerated as well in the minus group.

haps, that during the last trimester thyroid activity is increased. This would lead us to watch carefully a patient developing hyperthyroidism in the first three months, at which time the thyroid function is at its lowest, because of the possibility of the third trimester causing too excessive activity.

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#### DISCUSSION

DR. J. THORNTON WALLACE. My interest in Doctor Hughes' subject began some years ago in the study of the relation of thyrotoxicosis to pregnancy. Certainly not in our hospital and clinic, nor in the literature have I found any series of cases comparable either in number or



Plate XI

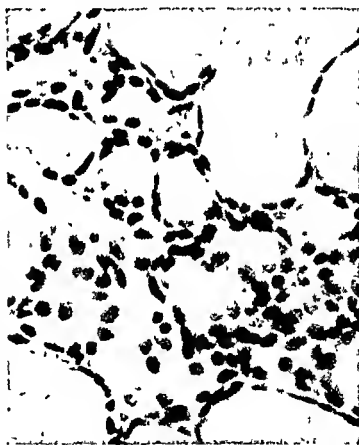


Plate XII

(13) There were more malformed babies in the minus group.

(14) Three cases of twins presented metabolic curves similar to normal, except for slightly higher values in the second and third trimesters.

(15) Four cases of thyroidectomies were followed during pregnancy. One was normal except for moderate nausea and vomiting. Two cases of hyperactive thyroids were followed. Both had increased activity in the last three months. Both thyroids after removal were not as active as would be expected, showing per-

in detail of study to that reported 10-day. Such scattered reports as have been made are of from one to eighty-five cases, and in many instances have come from physiologists and biochemists. Such a study as this, conducted by a clinician actively engaged in the practice of obstetrics, is not only timely but of the greatest value in its application to the practical problems involving this subject that confront the obstetrician. Its value is further enhanced by the fact that the studies have been made by one man who has known first hand all factors concerned in each case and among a group of women representing a good cross section of American life. So thoroughly and completely has the subject been covered by Doctor Hughes that I can do no better than to pick out from his paper those points which I consider worthy of further

emphasis and call them once again to your attention.

His is the first heretical voice that I have heard raised against the until now generally accepted idea that in the majority of pregnant women the metabolic rate rises in the last trimester from 15 to 25 per cent above the normal for the nonpregnant woman of like age and surface area. When one looks more critically into previous reports in the literature, he finds that the conclusions drawn by Sandiford and Wheeler were from the study of a single case, which while thorough enough in itself, would hardly warrant generalization. In the 47 cases reported by Rowe and his associates, more than half were from a group of young, unmarried mothers, most of whom were under sixteen, and whose immature ages alone might have given rise to more than normal variations. Stander and Peckham in their 13 cases were working with toxemic subjects only, and while they were unable to state definitely that the toxemia influenced the basal rate to any marked degree, it might nevertheless have been responsible for the rise recorded. Zuntz, Hasselbach, Carpenter, and Murlin have all reported a rise of approximately 4 per cent over the nonpregnant state, a figure so small as to be easily within the realm of normal error or variation. The largest series of cases have come from Cornell and Baer. Both report a rise of from 33 to 35 per cent above the normal nonpregnant rate, a figure out of all proportion to most reports. With so wide a variation in figures as 4 to 35 per cent already occurring in the literature, it is to be wondered just what the true figure is, and would seem not only to justify the work done by Doctor Hughes but to call for even more careful investigation along this line.

As to a cause for the rise in rate during the last months of pregnancy reported by most observers, opinion differs. Some would attribute it to a simple increase in protoplasmic mass, others to an increase in thyroid activity, indicated by an easily measured increase in the iodine content of the blood, many to a combination of these two factors, a few to some hormonal influence, while most would frankly admit that the cause is unknown. Thus is illustrated again the chaotic state of our knowledge on this subject. As against the theory of protoplasmic increase raising the basal rate may be cited the 3 cases of twins followed by Doctor Hughes, where while the fetal protoplasmic mass increased abnormally, the basal rate failed to rise proportionately.

I have not found any one in the literature who has tried so extensively as Doctor Hughes to correlate various clinical symptoms with the changes in the metabolic rate. All are thoroughly familiar with the relation of hyperthyroidism as indicated and measured by the elevation of basal metabolic rate to hyperemesis gravidarum and its dramatic amelioration by the administration of Lugol solution, but nowhere have I seen described the relation of a rapid drop in metabolic rate to the vomiting, acidosis, dehydration and prostration of early pregnancy brought out by the work of Doctor Hughes. With such a thought in mind, it is hardly too much to hope that some one may give us a definite therapeutic measure for the prevention of this distressing

state. Again, his comparison of maternal and fetal weight gain with metabolic changes is the first such comparison that has come to my attention.

I think it has been the common feeling of most of us that those women of the so-called sub- or hypothyroid group along with the hypopituitary group are prone to have irregular or abnormal labors, but here Doctor Hughes has given actual figures to show that women with lowered basal rates, possibly or presumably due to lowered thyroid activities, either primary or secondary to a general endocrine imbalance, are likely to have such. Just as it has been claimed by some that long, nagging labors may be predicted by the finding of a narrowed pituitary bed in an x-ray of the skull, who knows but that such a prediction may sometime be made possible by characteristic changes in the metabolic rate and some therapy designed to offset it.

His observations regarding spontaneous abortions where it was shown that out of 13 cases 10 had a lowered or at least a minus rate, while not conclusive is at least confirmatory evidence in favor of the commonly held opinion that patients with lowered thyroid function are less likely to become pregnant and more likely to abort. Litzenberg and Carey have written extensively and well on this particular phase drawing their conclusions from a series of 2,500 basal metabolisms, mostly in sterility cases. I am sorry that his group of cases did not afford more material of the hyperthyroid type in order that he might have given even more weight than did his two cases to the idea that the hyperthyroid with elevated rate and other characteristic symptoms is even more unlikely to conceive and much more apt to abort, miscarry, or have a premature labor, than the hypothyroid.

His experience with previously thyroidectomized patients has differed somewhat from ours in that in none of that group did we have any abnormal labors, abortions or miscarriages. None suffered more than the usual discomfort of pregnancy. However, in neither of our series have there been enough cases for definite conclusions to be drawn.

The finding of a greater number of anomalies among the minus than the plus is of particular interest to me. Doctor Hughes has reported in 48 mothers suffering from tyrotoxicosis, 7 babies with meconium neonatorum, 2 congenital cardiac and 4 anencephalics. We had one mother who was known to have suffered from tyrotoxicosis through six pregnancies and whose fifth baby had a congenital heart lesion, and her sixth a hair lip and cleft palate. More data of this kind will be helpful in determining whether fetal anomalies are more common in hypo- or hyperthyroid mothers than they are under normal conditions.

In conclusion, I would like to voice a plea for more work of this kind, to be done with more effort directed toward the study of changes in metabolic rate and its relation to symptoms than has been done in the past. In this way, and in this way only, will a true picture of the metabolic rate for the pregnant woman be established and its value as a clinical tool determined.

## PROPHYLACTIC POSTOPERATIVE ROENTGENOTHERAPY FOR CARCINOMA OF THE BREAST

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Prophylactic roentgenotherapy following mastectomy for carcinoma of the breast has been in use for over twenty years, yet there is disagreement as to its merit<sup>1-5</sup> and the best method of its application.<sup>6-8</sup> Evaluation of this treatment has been based chiefly on gross statistical comparisons of survival periods with and without postoperative roentgenotherapy, while factors bearing on the natural life cycle of the tumor have not been given sufficient consideration. Uniform statistical grouping of divergent clinical histories may be misleading, as illustrated by two following cases from our series: In one, radical mastectomy and postoperative roentgenotherapy were instituted after the tumor had been noted twelve years; the patient remained well for seven years thereafter. In a second, radical mastectomy and postoperative irradiation were started one month after the tumor became apparent, yet the patient died five months following operation. It would be manifestly unjust to credit the long survival in the first case to treatment, or condemn it on the basis of the second experience; the clinical course in both cases was not determined by the treatment as much as by factors inherent in the tumor and host. Other inaccuracies, depending on our methods of diagnosis of cancer, have also not been taken into sufficient account; not only are we unable to appreciate clinically microscopic foci of cancer, but even larger masses, *e.g.*, in the internal mammary chain of lymph nodes, completely escape early recognition; inflammatory thickening<sup>9</sup> and fat necrosis<sup>10</sup> in the mastectomy field are frequently mistaken for recurrence and chronic adenitis of the supraclavicular region for metastases. The use of great numbers of cases in statistical studies can only partially overcome this shortcoming, and at times a better insight into conditions may be obtained by a detailed study of a smaller series.

Usually, irradiation is limited to the operative field on the chest wall and the adjoining supraclavicular and axillary

regions. It is generally accepted that the majority of carcinomas of the breast are radioresistant, *i.e.*, intensive irradiation is required to affect them. However, the thin, scarred, poorly nourished skin flaps in the axilla and anterior chest wall remaining after a thoroughly done mastectomy cannot support vigorous x-ray dosage. The dosage given in this area is usually kept low and it is not surprising that 8 of 9 cases of skin metastases in our series, started in the irradiated operative area of the anterior chest wall. Logically, postoperative prophylactic x-ray therapy of cancer of the breast should not be limited to the usual areas of local extension, but should also include the commonest sites of metastases, *i.e.*, the lungs, bony pelvis and intervening lymphatics.<sup>11</sup> This, however, is impractical, as the body does not tolerate intensive irradiation over extensive areas.

Fear of post-irradiation pulmonary sclerosis has led to attempts, to exclude the lungs from the area of irradiation, by skimming the chest wall with tangentially placed fields.<sup>12</sup> The impracticability of limiting the x-ray beams to the exterior chest and yet administering sufficient dosage to destroy retrosternal metastases seems too evident to need further elucidation. On the contrary, this subpleural part of the lungs must of necessity be over-irradiated in this method. Nevertheless there is a scarcity of reports of authentic cases of pure pulmonary sclerosis even after the much more intensive roentgenotherapy. The majority of suspected instances prove at autopsy to be connective tissue replacements of cancerous metastases.

Discussion of whether to use small doses (300 r) repeated at bimonthly intervals for two years postoperatively,<sup>7,8</sup> or to administer full erythema doses repeated four to eight times at monthly intervals,<sup>6</sup> was settled in favor of the former method, at the Congress of the German Roentgen Society, in 1926. Many clinics have since adopted this technic and are using 130 K.V. and 3 mm. Al. Growth restraint of

radiosensitive, incompletely removed carcinomatous infiltrations in the superficial layers of the chest wall, axilla, or supraclavicular region, may occasionally be obtained by this technic. For instance: One of our cases with extensive skin metastases, invading the mastectomy area "en cuirasse," was partially controlled for the succeeding three and a half years by the administration during this period of seven cycles of x-ray treatments, with 125 K.V. and 3 mm. Al., at 10 in. T.S.D. Though similar irradiation did not prevent the postoperative appearance of skin metastases on the irradiated chest wall in 7 other cases already mentioned. Handley's contention that many skin metastases are surface extensions of cancerous spread along the lymphatics of the deep fascia<sup>13,14</sup> must be borne in mind, as postirradiation invasion of a thoroughly irradiated field, may, perhaps, explain many an irradiation failure. In 2 of our cases the first postoperative appearance of skin nodules was noted near the sternocostal junction of the second rib, *i.e.*, overlying the corresponding, internal mammary lymph nodes, emphasizing the need for efficient radiotherapy, of this surgically inaccessible region.<sup>13,14</sup> While the internal mammary lymph nodes lie at the edge of, and not behind the sternum, the absorption of irradiation by this bony structure may become important if the sternum is included in the field of irradiation and low or medium voltage x-rays are used. If this absorption is measured by interposing an average 8 mm. manubrium sterni between the x-ray tube operating on kenetron rectification with an unsmoothed current, and an ionization chamber, the following proportion of absorption will be found:\* 25 per cent if 108 K.V. and 0.25 mm. Cu. plus 1 mm. Al. are used; 17 per cent if the voltage is 130 K.V. and the filter 3 mm. Al.; and only 5 per cent if 200 K.V. and 0.5 mm. Cu. are employed. The superiority of higher voltage for irradiation of this region seems self-evident.

The tendency to "local recurrence" may be diminished by wider resection of skin and fascia and meticulous care in the handling of carcinomatous tissues. Clinically inappreciable metastases in the supraclavicular and internal mammary region, however, are probably better handled by

radiotherapy. For this reason at present we prefer more vigorous dosage and higher voltages for postmastectomy roentgenotherapy.

In spite of the various shortcomings of repeated small low-voltage treatments, which we now recognize. This was the method of therapy in a series of 78 radical mastectomies treated at the Presbyterian Hospital, New York, from 1923 to 1929, and followed up for a minimum of five years. The technic consisted in the administration of 400 r over the operative chest wall and anterior surfaces of the adjoining axilla and supraclavicular regions, as well as the opposite axilla. The factors used were 130 K.V., 0.25 mm. Cu. plus 1 mm. Al. (= about 6 mm. Al.) and 40 cm. T.S.D. The series was repeated at least once, in four to eight weeks. In some cases additional similar cycles of treatment were given at two- or three-months intervals, several times more. Treatment in all of the cases had been started within six months after operation. All had been proven microscopically. Particular attention has been paid to clinical factors which might influence evaluation of this method of treatment in this series of cases.<sup>15</sup>

The age at which the tumor first made its appearance in the 78 cases, showed a predominance of the fifth decade:

20 to 30 years.....	2.5 per cent
31 to 40 years.....	25.7 per cent
41 to 50 years.....	42.3 per cent
51 to 60 years.....	19.2 per cent
61 to 70 years.....	7.8 per cent
71 to 80 years.....	2.5 per cent

The right breast was involved in 36 and the left in 42 cases.

The quadrants in which the tumor arose, were in order of their frequency:

Upper outer quadrant.....	39 cases (50.0 per cent)
Central part of breast.....	17 cases (21.8 per cent)
Upper inner quadrant.....	13 cases (16.6 per cent)
Lower inner quadrant.....	5 cases (6.4 per cent)
Lower outer quadrant.....	4 cases (5.1 per cent)

Microscopic examination failed to disclose axillary metastases in only 12 cases. Of the remaining 66, the lower axillary nodes alone were involved in 25, and the lower and upper in 41.

The relation of the site of the primary tumor to the presence of homolateral axillary metastases was investigated:

\* Courtesy of Prof. Kenneth Cole, College of P. & S., Columbia University.

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Lower outer quadrant.....	4 (100.0 per cent of 4 cases)
Central part of breast.....	15 ( 94.5 per cent of 16 cases)
Upper outer quadrant.....	34 ( 85.0 per cent of 40 cases)
Upper inner quadrant.....	10 ( 77.0 per cent of 13 cases)
Lower inner quadrant.....	3 ( 60.0 per cent of 5 cases)

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The above table would lead one to believe that irradiation of the operated axilla is indicated irrespective of the quadrant of the breast in which the primary tumor arose. However, this is contradicted by a study of the postoperative occurrence of metastases in this region. It will be remembered that both axillae were irradiated similarly, yet of 12 cases with axillary metastases arising postoperatively, only one occurred on the operated side and 11 in the opposite axilla; in 2 others both axillae were involved. In other words, metastases appeared mainly where the nodes had not been removed, and irradiation did not prevent their appearance. The same fact was corroborated by examination of the postoperative occurrence of metastases in the supraclavicular region: There were 22 cases which presented themselves on the irradiated (mastectomy), side and only one in the opposite side; in 5 others both sides were involved. From these figures, one cannot conclude that roentgenotherapy, as given in this series, helped to prevent supraclavicular or axillary metastases. It would also seem that where a thorough axillary dissection has been made, irradiation of the operated axilla is not essential, but that larger doses are needed for the supraclavicular region on the operated side and over the opposite axilla.

The influence of the site of the primary tumor on the frequency of occurrence of postoperative supraclavicular metastases was studied. No metastases were found where the tumor arose in the lower quadrants. Thirty-five per cent of the tumors arising in the central portion of the breast, 36 per cent of those from the upper outer quadrant, and 46 per cent of cancers originating in the upper inner quadrant, gave rise to metastases in the supraclavicular region of the same side.

Postoperative metastases to the opposite axilla occurred most frequently in tumors arising in one of the lower quadrants.

The preoperative size of the primary tumor in the breast was noted. The cases were arbitrarily divided into 51, in which the diameter of the mass was roughly 5 cm. or less, and 27 in which it was more

than 5 cm. The relation between the size of this mass and the presence of axillary metastases was studied. Of 51 cases in which the lump was 5 cm. or smaller, axillary metastases were present in 78.5 per cent, and of 27, in which the lump was larger than 5 cm., axillary metastases were present in 96 per cent. It might be noted that 8 of 10 tumors with preoperative axillary metastases on the operated side, in which the primary tumor arose in the upper inner quadrant, were 5 cm. or smaller. Such rapid spread to the axilla was not seen in tumors arising in the other quadrants.

Fifteen cases were alive and well for more than five years after radical mastectomy. Though free from cancer, one of the 15 died nine years postoperatively from pneumonia, and another from pulmonary tuberculosis fifteen years postoperatively.

The size of the mass, the presence of axillary metastases, the quadrant from which the primary tumor arose, and the preoperative duration of the tumor were studied, in their relation to the survival period. Most deaths due to cancer occurred during the first three years postoperatively, the cases with tumors larger than 5 cm. showing a slightly higher death rate (55 per cent of 27), than those with smaller tumors (47 per cent of 51). A study of the cases clinically arrested for more than five years showed this difference more clearly: There were 12 cases (23.5 per cent) of 51 with tumors 5 cm. or less, and 3 (11 per cent) of 27, with tumors larger than 5 cm.

Survival was greatly influenced by the extent of axillary involvement.

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DEATHS DUE TO CANCER DURING THE FIRST  
3 YEARS POSTOPERATIVELY  
42 CASES

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Axillary glands not involved .....	1 case ( 8 per cent of 12 cases)
Involvement of lowermost nodes only .....	12 cases (45 per cent of 25 cases)
Involvement of upper and lower nodes .....	29 cases (71 per cent of 41 cases)

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Definite significance could not be attached to the quadrant from which the primary tumor arose,<sup>20</sup> except that the fewest five-year survivals (1 of 17) were found in cases arising from the central portion of the breast.

QUADRANTS IN WHICH TUMOR AROSE, AXILLARY  
METASTASES, AND SIZE OF TUMOR IN RELA-  
TION TO 5-YEAR CLINICAL FREEDOM  
FROM DISEASE

Quadrants	Total No. of cases 78	Clinically arrested cases 15	Axillary metastases	
			positive	negative
Lower outer.....	4	1 (25 per cent)	1	—
Upper outer.....	39	9 (23 per cent)	8*	1
Upper inner.....	13	3 (23 per cent)	1	2
Lower inner.....	5	1 (20 per cent)	—	1
Central .....	17	1 (6 per cent)	1	—

\* Two of these tumors were larger than 5 cm.  
Of the 15 tumors, 13 were 5 cm. or smaller.

The bearing of the preoperative duration of the tumor on prognosis was not clear. The slower growing tumors caused less severe symptoms; the patients therefore came to the surgeon later, but the post-operative course of their disease also seemed slower. Among 11 arrested "small" tumors there were four (15 per cent of 27) in which the tumor had been noted for six months or less preoperatively; five (31 per cent of 16 cases) had been evident from seven months to one year; and in two cases (25 per cent of 8) the tumor had been present from one to three years. Of the three "arrested" patients with "large" tumors, one gave a history of less than six months, another close to five years, and the third, twelve years prior to mastectomy.

CLINICAL FACTORS INFLUENCING SURVIVAL OF  
PATIENTS WITH RADICAL MASTECTOMY AND  
POSTOPERATIVE PROPHYLACTIC  
ROENTGENOTHERAPY

	Total No. of cases 78	Deaths within 3 years P.O. 24 cases 31 per cent	No clinical evidence of disease 5 years P.O. 15 cases 19 per cent
Tumor 5 cm. or less..	51	47 per cent	23.5 per cent
Larger than 5 cm..	27	55 per cent	11.0 per cent
Axillary Involvement			
None .....	12	8 per cent	58.0 per cent
Lower nodes only....	25	45 per cent	20.0 per cent
Upper and lower nodes .....	41	71 per cent	7.0 per cent

No definite significance could be attached to site or preoperative duration of tumor, except that only one of 17 cases with central tumor survived 5 years.

*A review of the various clinical factors influencing the course of the disease in this series reveals the difficulty of evaluating prophylactic roentgenotherapy following radical mastectomy without the detailed information mentioned above.*

The technic of dividing dosage over a period of months and years has been shown by Regaud<sup>16</sup> and his coworkers, to be ineffective for permanent arrest of cancer in general, and they have substituted for

it the intensive fractionated method known as Coutard's technic. In a personal communication, Coutard recently stated that for some years past he has occasionally been successful in arresting inoperable cancer of the breast by his method of treatment. This led us to apply modified principles of his treatment to prophylactic roentgenotherapy following mastectomy.

In an effort to place this more intensive method of postoperative roentgenotherapy for breast cancer on a sounder basis, we carried out the following investigation. We exposed eleven cases clinically diagnosed as cancer of the breast, to varying doses of intensive fractionated roentgenotherapy; three to seventy days later mastectomy was done and the breast sections were studied microscopically by Doctor V. K. Frantz. The factors used were 200 K.V., 8 M.A., 50 cm. T.S.D., filter, 2 mm. Cu. plus 1 mm. Al. in 7 cases, and 0.5 mm. Cu. plus 1 mm. Al. in 4 cases. One single field over the breast tumor was used and the irradiation given within a period usually not exceeding three weeks. It is realized that greater dosage could have been brought to bear on the tumor by cross-firing from various directions; but for the sake of simplicity of calculating the tumor dose, the single field seemed more desirable.

*Interpretation of Table*

The size of the mass has been recorded in the clinical measurements before treatment. This is because most of the laboratory measurements were on fixed specimens. In many of the tumors there was a diminution in size clinically, but the amount was often in dispute, and it is, of course, difficult to know what proportion of this shrinkage was due to change in the stroma and what part to actual destruction of tumor cells. In this connection one is reminded of the current hypothesis maintained by some radiologists that x-radiation influences the stroma more particularly, and radium the tumor cells. In comparing this short series with another of equal length where the treatment was by implantation of radium, we have found no evidence to support this view. It must also be remembered that until the tumors can be thoroughly studied histologically both before and after radiation, it is very hazardous to attribute any microscopic findings to the effect of radiation. All the degenerative changes observed, both in stroma and tumor cells, have been repeatedly seen in tumors which have not been radiated, and detailed comparative studies on the individual tumors must be made before one can speak with assurance on this point.

The dose is shown as the skin dose. We attempted to estimate the tissue dosage but the estimates of the size of the tumor and depth below the skin were too inaccurate.

No attempt has been made to classify the tumors morphologically. In the first place, there



TISSUE CHANGES IN PREOPERATIVELY IRRADIATED CARCINOMA OF BREAST  
*Microscopic Changes*

Size of mass clinical cm	Surface dose, r	Preserva- tion tumor cells 0-4 plus	Number of mitoses	Shadows of tumor cells	Degenerative changes in stroma	Degenera- tive changes in blood vessels	Metastases postop
6 x 6	600	+++	1 in 4 h p f	0	++ (calcium)	+	0 3 mos
5 x 5	1200	+++	0	0	0	+	+16 mos
4 x 4	1500	++++	1 per h p f	++	+++	+	+ 9 mos
5 x 5	2100	++++	1 in 10 h p f	++	+++	++	+ 11 mos
3.5 x 3.5	2400	++++	1 in 100 h p f	++	+++	++	+ 14 mos
6 x 7	3000	++++	3 in 100 h p f	++	+++ (calcium)	++	+ 2 mos
7 x 5	3000	++	0	++	+++	+	0 11 mos
4 x 4.5	3000	++++	1 in 2 h p f	++	+++ (calcium)	+	+ 11 mos
3 x 4	3000	+	0	+++	+++	++	0 13 mos
2.5 x 1.5	3000	A+	0	+++	+++	++	0 13 mos
1 x 1	3400	B++	1 in tumor	+	+++ (calcium)	+	0 12 mos

The average interval between last treatment and operation was one month  
In first case — 3 days

is great variation in the morphology of tumors of the breast. Several careful studies in grading breast tumors according to the degree of malignancy have been made, but so far as we know the relation between definite morphologic types and radiosensitivity has as yet not been securely established for cancer of the breast. With a standard operative technique and a careful clinical follow up it should be possible to come to some conclusions about the relative malignancy of different types of tumors, but in order to estimate the radiosensitivity the same technique must be followed, that is there must be an adequate study of the tumor histologically before it has been radiated, and a large enough series must be treated by uniform technique so that the five year follow up can be compared. This has not yet been done. It must also be remembered that not infrequently a single breast tumor may vary in morphology in different portions of the original growth, as well as in the metastases, although this is not the rule. Radiation may so alter the original morphology that it is no longer recognizable. This is suggested by one case in our series in which the tumor in the breast, which showed what we thought were pronounced radiation changes, looked quite anaplastic, while the metastasis in the axillary node, which did not show radiation changes was a glandular carcinoma with mucin in the cells.

In all the cases there were recognizable tumor cells. In most there were shadows of tumor cells, without nuclei obviously necrotic. In all there were degenerative changes in the stroma and vessels. The preservation of tumor cells, however, is not necessarily an index of viability. One might consider these cells so badly damaged that they would remain quiescent or, perhaps, locked in the altered stroma. Unfortunately, however, in only 4 of the cases was mitosis controlled while its presence, we believe, is evidence of life in the cell. These observations were made only after careful study, counting, if possible, at least 100 high power fields or, if the material was very limited, 1000 cells, and then reviewing all of the tumor.

The cases are too variable and too differently treated to make the follow up of much significance. Moreover, not much more than a year has elapsed since the operation. Three, however, have metastases which may, perhaps, have already taken place before the treatment. This seems

especially probable in one case which developed a mass in the opposite breast only two months postoperatively. The others were later and were bone metastases. It is noteworthy that as yet there have been no local recurrences. We do not know how one can decide where the credit for this goes—to the surgeon or to the radiotherapist.

Analysis of the above makes it questionable whether sufficient dosage for permanent arrest of hidden cancer cells can be administered without serious damage to normal tissues in the operative area. To obtain the tumor doses quoted above with the factors as described, it was necessary to produce a complete shedding of the epidermis of the irradiated skin in the cases receiving 3,000 r (in air) or more on the skin. The most striking case is the one where apparently intact cancer cells were found in the skin nodules<sup>24</sup> which received 3,400 r. Apparently viable cancer cells were found in all of the tumors examined, and mitoses were seen in 6. The interval between the last roentgen treatment and the mastectomy was in all but two instances sufficiently long to allow for a full effect of irradiation to take place. Though it is not denied that clinically these cases might have remained quiescent, this possibility is made unlikely in at least 5 cases by the presence of mitoses, 28 to 70 days after irradiation.

These findings do not, however, in the least militate against prophylactic postoperative roentgenotherapy for the purpose of restraining growth, of possible hidden metastases. That growth restraint is possible even with small doses was illustrated earlier by the case of cancer "en cuirasse" partially controlled for three and a half years and probably accounts for the reports of an increased number of five-year sur-

vivals of irradiated, as compared to non-irradiated mastectomy cases. It may be assumed, that cancer cells, like spirochetes in syphilis of the central nervous system, may lie dormant in the tissues until some factor in the tumor or host reactivates their growth so that their presence becomes clinically appreciable. This is illustrated by those occasional cases of skeletal metastases which do not manifest themselves clinically until fifteen or twenty years after mastectomy.<sup>18,19</sup> As permanent arrest of hidden masses of cancer cells following mastectomy does not seem likely with the use of average doses of post-operative roentgenotherapy, the real function of this treatment should be to increase the tendency of the body to *restrain the growth* of cancer cells left behind after the operation. Five-year survivals form the basis of surgical statistics, yet breast cancer deaths occur after this period. Eight of the 78 cases in our series died of cancer later than five years after their treatment.

We believe that perhaps better growth restraint may be obtained by the use of more vigorous x-ray dosage. We have therefore, experimented with single series of 1,000 to 2,000 r (in air) to the anterior and posterior surfaces of the supraclavicular region of the same side, the anterior surface of the sternal region, and frequently to the posterior aspect of the operated axilla. We prefer 200 K.V. to the lower voltages for reasons stated earlier. Our observations, however, are as yet too few and too short, to permit correct evaluation of the merits of this method.

The material presented thus far leads to the following conclusions:

1. The survival period of 78 patients with radical mastectomy and postoperative medium voltage x-ray therapy was influenced by the pre-operative size of the tumor and extent of axillary metastases.

2. Cancer cells were found microscopically in 11 cases of carcinoma of the breast treated pre-operatively with doses ranging from 600 r to 3,400 r (in air) on the skin. It is unlikely that sufficient dosage is given in the usual course of postoperative x-ray therapy to completely destroy cancer cells hidden among the poorly nourished radiosensitive tissues of the mastectomy field. The function of postmastectomy roentgenotherapy at present, should be growth restraint, and careful clinical observation, continued for years after radiotherapy, should be part of this function. We are as yet uncertain as to the best method of applying roentgenotherapy for this purpose. However, single series of rigorous treatments, not

repeated, have in cancers of other regions been proven more efficient than weak doses repeated over periods of years.

3. Irradiation following radical mastectomy with thorough axillary dissection, should be concentrated on the supraclavicular area of the same side, the presternal region and perhaps opposite axilla.

4. High-voltage roentgenotherapy is probably preferable; especially for retrosternal nodes.

5. The danger of postirradiation pulmonary sclerosis with average doses is negligible.

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#### DISCUSSION

DR. DOUGLAS QUICK: Dr. Lenz and his associates have given us an admirable report on the postoperative therapy of breast cancer. It is a large field and one in which every member of

this Section doing therapy is vitally interested. The greater uniformity of agreement we may be able to arrive at on this subject the better will be the results. Good postoperative therapy of the breast is very necessary because many surgeons will not consult irradiation therapy until after their real interest in the case is terminated by the completion of their operation.

Personally I am more interested in preoperative irradiation of breast cancer, and irradiation alone in certain cases. It is my belief, supported by reasonable experience, that preoperative irradiation lends greater assurance to the ultimate result than does postoperative treatment alone. The reasons for this are rather well recognized

by radiologists and, hence, need not be enumerated here. It is my opinion that too many borderline cases are still being operated upon and then being turned to postoperative therapy with the false hope that this treatment will eventually remove the curse from the otherwise ill-advised operation. In the early days of irradiation therapy some of the major cancer groups had the advantage of strong men championing treatment by irradiation. I refer to work such as that of the late John G. Clark and the late H. H. Janeway in cancer of the cervix uteri cancer of the mouth. Today the treatment of cancer of the breast needs the aggressive support of similar advocates.

## POVERTY AND DISEASE

The increasing toll of disease in the poorer sections of our cities can be remedied better by the provision of proper food and housing than by pouring millions into propaganda for health insurance, remarks the *New York Medical Week*, which is in a position to speak with considerable authority. With the prolongation of the depression, it says, there is mounting evidence that a large amount of ill health among the poorer classes is the product, not of an inequitable system of distributing medical care, as the advocates of compulsory health insurance would have us believe, but of the appalling living conditions that poverty imposes. Disease and death have their choicest stalking grounds in the overcrowded unsanitary tenements reserved for the poor. Welfare workers have found 33 per cent more illness among the jobless than among the gainfully employed. Not only is malnutrition, with its attendant susceptibility to respiratory infection, on the rise, but there is a marked and significant increase in the percentage and degree of the psychoneuroses springing from anxiety and fear.

There is indeed a vast need for preventive health service among the poor, but it is not as much a need for elaborate physical examinations of the able-bodied as for sanitary housing, suitable food, and regular occupation. Periodic health examinations are a sound practice, but the essential foundation for health is clean, airy homes, adequate nutrition, and the certainty of regular earnings. The foundations that are spending millions in propaganda for compulsory health insurance would be surprised at the improvement they could effect by devoting their resources to such practical uses as low-cost housing.

Through good times and bad, the health of the world has continued to improve steadily under the existing system of medical practice. The disproportionate ills of the poor and the lower middle class are due in large measure to their insecure economic status. Prevention lies in the eradication of poverty rather than the diversion of public funds to the costly bureaucracy on which compulsory health insurance rests.

## AN EXAMPLE AND A WARNING

That is what the unhappy experience of the doctors of Milford, Mass., is called by the *New York Medical Week*, which found the matter reported in the *New York Sun*. As it remarks, Milford, which has strongly encouraged lodge practice in the past few years, is at once an example and a warning of what to expect if the physician loses his professional independence and becomes the servant of an employment organization. According to a recent editorial in the *Sun*, the practitioners retained by various fraternal groups in Milford received an annual fee ranging between eight and twelve hundred dollars a year, for which they were to treat members and their families for all ailments except those requiring hospitalization.

Here is the dream of the health insurance propagandist come true; the physician received a fixed (if obviously inadequate) stipend and the participating public reaches a new health level because of the opportunities for unlimited medical care. Alas, in Milford, as elsewhere, this has proven to be "such stuff as dreams are made of." In actuality, the community developed an acute hypochondria (or was it merely the

provincial trading instinct of the Yankee) which kept the doctor busy at all hours of the day and night tending to minor discomforts for which a physician is not ordinarily called.

Milford is by no means alone in this experience. The patient of the lodge, contract, or insurance doctor is determined to get his money's worth; and the physician, no longer an independent practitioner but a hireling, is obligated to answer the summons of his employer at reasonable and unreasonable hours, for causes trivial or just.

In Milford the doctors are abandoning the fraternal organizations to regain their professional independence in private practice. Their experience is a warning to the rest of the profession not to fall in too easily with plausible schemes for lay control of healing.

The sage paragraph appears in the *Bulletin of the State Board of Health of Kentucky*, and is worth wide circulation: "Go to your doctor herefore he has to come to you. It is safer and cheaper."

## CASE REPORT

### A PROSTHESIS FOR EXENTERATED ORBIT

GUERNSEY FREY, M.D.

*New York City*

A woman of 44 had had a melanotic naevus of the left eyeball and lids for many years. It suddenly took on growth, became vascular, and showed every sign of malignant change. Exenteration of the orbit was performed, with removal of the lids. Secondary skin grafting was performed three weeks later, and the wound healed uneventfully. The pathological diagnosis was melanosarcoma.

coloring and life-like eyelashes give a very realistic effect. The device is held in place by spectacles to which it is attached by two thin wires—the shell frame of the glasses being in front of the line of junction of the skin and the prosthesis, and effectively concealing the artifice. Far from being grotesque or in any way disconcerting to the onlooker, the appearance of the patient wearing the prosthesis is extraordinarily



Fig. 1—The patient, after operation, without the prosthesis



Fig. 2—The patient wearing the prosthesis



Fig. 3—The prosthesis—front view



Fig. 4—The prosthesis—side view

The usual destiny of such cases is to go through life wearing a black patch over the deeply excavated orbit. To avoid this fate, this patient was referred to a well-known manufacturer for a prosthesis to cover the orbital aperture. A silver plate, modeled with beautifully moulded lids and globe, whose edges conform to the defect in the face, was provided. Artistic

natural. She has learned not to move the other eye, and when seen at a distance of three or four feet, the impartial observer is usually at a loss to decide which is the natural eye.

This case reminds us that when we have cases which are beyond the limits of plastic surgery, we may still resort to camouflage

121 EAST 60TH STREET

## CASE REPORTS

### ACUTE PANCREATITIS COMPLICATING PREGNANCY

CHARLES R KINGSLEY, M D  
*St George Staten Island*

Acute pancreatic disease during and after pregnancy is mentioned as a rarity in a few of our recent text books on obstetrics<sup>1 2</sup> and reports have appeared only occasionally in medical literature.

The following two cases are reported because so rare and violent a complication affected young, healthy women, because of the diagnostic difficulties, and finally because both patients recovered and both children lived. In both the diagnosis was proven by operation.

Mrs R B, gravida I, age 25, came under the writer's care September 14, 1932. The final day of her last menstruation was July 28, 1932, giving an expected date of labor May 5, 1933. Physical examination was negative, pelvic examination and measurements were normal. Height 5 ft 7 in., weight 125 lb. Urine was normal. Past history and family history negative.

With the exception of a gain of 41 lb in weight, pregnancy progressed uneventfully to term. On April 10, 1933, blood pressure was 130/80, there was slight edema of the legs, a trace of albumin in the urine, the child in LOA position, with the head well engaged. On April 24th, the edema of the legs and thighs was considerable, but the albumin in the urine no greater and blood pressure 120/80.

On April 27th, pains began at noon, colicky, severe, recurring at intervals of about fifteen minutes, and most intense in the epigastrium, back, and shoulders. At 1 30 P M the face was flushed and she seemed anxious, complaining of the pains. Abdominal palpation revealed no tenderness and the uterus seemed to contract with the pains. Rectal examination showed a cervix neither dilated nor effaced but the head well engaged. It seemed that typical labor had begun.

At 4 40 P M pains had become more frequent, every ten minutes, across the upper abdomen. Abdominal and rectal examinations were as before, but she had vomited twice. She was taken to the Staten Island Hospital.

In the hospital the pains became more severe until at 1 P M  $\frac{1}{4}$  gr of morphine was given, though with but little relief. An enema was ineffectual and vomiting had occurred again. The blood pressure was unchanged, granular casts had appeared in the urine. No evidence of progressive labor was found on rectal examination.

On the morning of April 28th she was in great distress. Pains had become almost continuous and she cried out with them, her face was drawn and flushed. At 2 P M it was obvious that labor was not in progress but that some intra abdominal disaster was responsible for her condition. The temperature was 101.4° F, pulse 120, respirations 36. Leucocytes were 23,600 with polymorphonuclears 93 per cent. The abdomen was now tender but not rigid across the epi-

gastrium. In both flanks there seemed some rigidity more marked in the right iliac fossa. In consultation with Drs Charles E Pearson and Donald E Law a preoperative diagnosis of perforated appendix, perforated gastric or duodenal ulcer or high intestinal ileus was made. Twelve hundred cc of 5 per cent glucose was given intravenously.

At operation by Dr Pearson through a muscle-splitting incision there was a gush of turbid yellow fluid on opening the peritoneum. The intestines were uniformly injected. The appendix was normal. Innumerable areas of fat necrosis studded the omentum and mesentery. The diagnosis being settled it was thought best to decompress the abdomen. Accordingly the writer performed, through a midline incision, a low classical cesarean section, delivering a living female child weighing 6 lb 7 oz.

After uterine suture palpation revealed a normal gallbladder but a somewhat enlarged pancreas. There was no mesenteric or retroperitoneal hemorrhage. It was decided not to drain the pancreas in the belief that relief from intra-abdominal pressure might reestablish pancreatic function. The midline incision was sutured and Dr Pearson performed a cecostomy before closing the first incision.

A stormy postoperative course followed. Although vomiting was absent and the cecostomy functioned well, there was abdominal distress for seven days, but at no time rigidity or marked tympanites. TPR remained high. On the 6th day a right lower pneumonia was found. The cecostomy tube was removed on the thirteenth day. Thrombophlebitis developed in the left leg with a further rise of temperature. Defervescence was by lysis to normal on the twentieth day. Repeated urinalyses showed albumin and granular casts and once  $\frac{1}{4}$  per cent sugar, but the urine was normal on the 22nd day, when the patient left the hospital.

Return to health was gradual. Three months later, except for slight left leg edema, she was in good condition, urine, blood pressure normal, and without any disturbance of the gastro-intestinal tract. One year later, May, 1934, mother and baby are both well.

Mrs J B, gravida I, age 25 was suddenly stricken, February, 1918, during the third month of pregnancy with severe lancinating epigastric pain. She fell to the floor. Morphine was given by a nearby physician. Several hours later she was seen by the writer still suffering severely. She had vomited, emenata had been ineffectual. Her face was pale and drawn, expression anxious, skin clammy, pulse 140, temperature subnormal. The abdomen was flat, palpation well borne but there was some tenderness and rigidity in the

lower half. Because of pain vaginal examination gave little information.

She was removed to the Staten Island Hospital where the late Dr. William Bryan operated on the natural assumption that rupture of an ectopic pregnancy had occurred. A suprapubic midline incision showed the abdomen to contain considerable free bloody fluid. At first sight the pre-operative diagnosis seemed correct but search disclosed normal adnexae with a normal pregnant uterus of three months size. The incision was extended upward revealing mesenteries, omentum and retroperitoneal tissues distended with blood. The pancreas was tense and much enlarged. As the patient seemed in very poor condition with signs of impending collapse the abdomen was rapidly closed.

To our surprise this woman recovered, went on with her pregnancy and was delivered of a normal child August 29, 1918. Two years later she went through a normal pregnancy and labor.

Twelve cases have been found by the writer in the literature. Maertens<sup>3</sup> collected 9 of these that had been reported between 1921 and 1928, the date of his report, one of which was his own. Kroger<sup>4</sup>, Gatewood<sup>5</sup>, Baker<sup>6</sup>, each reported a case. Of the 12, 3 recovered after operation. In several gallstones found either at operation or at autopsy were apparently the precursor of the pancreatitis.

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100 CENTRAL AVENUE

### PESTIFEROUS RADIO PRESCRIPTIONS

It is good news to many weary radio listeners to hear that the medical profession is trying to clear the air of the pestiferous patent-medicine peddlers. Heartfelt gratitude is voiced by Rollo Wells in a publication called the *Austinite*, where he remarks that it is time somebody headed off this epidemic of free advice which comes floating in every time we turn on the radio. Just as we get settled down comfortably to enjoy a hill-billy song, after tuning out a saw-filing soprano and a couple of gurgling crooners, the music stops and a sepulchral voice, accompanied by a clicking of loosely connected false teeth, reminds us that man born of woman is of few days and full of microbes.

Mr. Wells confesses that he gets a creepy sensation as this ethereal ghoul, between coughs, oratorically holds the gates ajar. Jitters pass up and down our handsome brow as he catalogues all of our private symptoms just like he was peeking through the keyhole, instead of talking a long way off.

When we are about to lapse into a state of coma, wondering if our life insurance premium

is paid, the radio medicine man tosses us a life preserver and we sit up and take notice.

He implores us not to die in the house, but to walk or limp to the nearest drug store and get a five-pound package of nature's own remedy, carefully compounded from an old Indian prescription.

Mr. Wells hopes the doctors are successful in their efforts to drive the radio medicine men back on the reservation and make them quit scaring us out of seven years growth every time we try to tune in the baseball scores.

If the doctors can't do that, they should at least make the radio medicine men stop playing the funeral march during their health talks. It's appropriate, but we break out with a rash every time we hear it.

A newspaper paragrapher proves that many a true word is spoken in jest when he remarks that, "a normal patient is one who waits five hours to call the doctor and then raves if he isn't there in ten minutes."

### A GIRL WITH 200 TEETH

A Kansas City dentist was recently surprised to find that a young woman patient had 200 teeth in her mouth. As related in *Oral Hygiene*, the patient complained of toothache, and the dentist, on examination, noticed that she had a full-sized tooth growing in the roof of her mouth, but saw nothing else unusual.

Further exploration revealed, however, that every part of her mouth was sore. Unable to determine the cause of this sensitiveness, the dentist had roentgenograms made of her entire mouth.

Much to the amazement of Miss Larson and the dentist, these pictures when developed showed scores of tiny little teeth imbedded in the gums and roof of her mouth. These teeth were in addition to her normal set, but only the one in the roof of her mouth could be seen plainly.

To remove the extra teeth which ranged in size from a pin head to a grain of rice, required 200 extractions.

An effective home-made cooling system was devised during the hot spell last summer by three Nebraska doctors for their offices, as reported in the *Nebraska State Medical Journal*. Salvaging old car radiators, the three doctors set them up in their office rooms. Cold water from a tap passes through the radiators constantly. An electric fan is placed behind the cooling system and the cold air is circulated through the rooms. The room temperature is lowered from 20 to 30 degrees, they report.

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## EDITORIALS

### What Ails Nursing?

This question comes home with great force to the doctor, the patient, the hospital, the quarter million trained nurses, and the thousands of young people who are looking hopefully to nursing for a career. What ails nursing? That is what a notable committee has been investigating in no less than eight years of study, and they have reached a radical and startling conclusion. Headed by Dr. William Darrach, the committee includes representatives of the American Medical Association, the American College of Surgeons, the American Hospital Association, the American Public Health Association, and three national organizations of nurses. Its conclusions, therefore, are well worth attention.

The verdict of the committee appears in a volume of 268 pages, entitled "Nursing Schools—Today and Tomorrow," and to put the 268 pages into one sentence, the committee finds that to-day we have too many nursing schools and that tomorrow we should close the doors of the largest part of them. In the words of the committee: "Overproduction in nursing has to be stopped. There is one way to stop it, and that is to close most of the training schools."

When we recall that there are no less than 1,583 of these schools in the United States, we can imagine the dismay that will strike many of them as they read this opinion of the committee. Few of us realize, perhaps, some of the facts stated in the report. One-half of all the schools of nursing in the United States, it appears, are conducted by hospitals with not more than 75 patients, while one-fourth of the hospitals have only from 8 to 42 patients, and this, too, in the face of the fact that a daily average presence of not less than 100 patients is the minimum set by the International Council of Nurses for hospitals with training schools, because, in their opinion, a smaller roster of patients does not afford an adequate variety of clinical experience.

These hundreds and hundreds of little schools, poorly staffed, poorly equipped, have flooded the country with a vast overplus of trained nurses who are conscientiously doing the best they know, but, through no fault of their own, do not know enough. The twin results, the committee finds, are "overproduction" and undereducation." That is what ails nursing.

Probing a little deeper into this unfortunate situation, the committee finds that it came about perfectly naturally. A few years ago the hospitals discovered that student nurses were greatly superior to the old-type untrained attendants for taking care of patients, and the slogan was raised: "The way to have good nursing is to have a school." So the schools blossomed out like the flowers in spring. The hospitals were glad to defray all the students' living expenses and to pay small monthly allowances in addition. Naturally the number of applicants, tempted by such terms, grew by leaps and bounds, and the number of graduates swelled in proportion. In 1900, there were less than 12,000 trained nurses in the United States; in 1930, there were over 280,000.

Right here the committee touches the sore spot. The aim of the hospitals was to secure the services of the student nurses. After their graduation they could shift for themselves. Every year a new crop of 25,000 trained nurses was released upon an already overcrowded market, so that even in the boom years of 1928 and 1929 the nurses had an acute problem of unemploy-

ment. It was a strange situation, unparalleled in any other vocation. "Suppose," says the committee, "that hospitals reserved all their medical practice for undergraduate medical students, and assumed that as soon as a student received his medical degree, he would take himself off to practice outside the hospital walls!" Yet that was the plan for the student nurses.

One remedy, as noted above, is "to close most of the training schools." The committee would have us no longer hold out the hand of invitation to the aspirant, only to tell her she is not wanted when she completes her course, but would have us staff our hospitals with graduate nurses, if it can be done without increasing the cost. And it seems that it can. Hospitals are finding that part of the work now done by students can be carried by maids whose salaries are low, that fewer graduate nurses than students are needed, and that the money spent on first-year students can better be applied toward graduate salaries. The movement of graduates back to the hospitals has, in fact, already started, and, if it continues, it will relieve the unemployment problem and make it easy for the hospitals to close schools that are not up to par.

The committee's report is of interest to all who are studying this problem, and many other bodies are doing so, including our own State Society. With so many able minds concentrated on the situation it can hardly be doubted that a solution will be found.

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### Some Dangers of Contract Medicine

A new form of contract practice, it appears, is springing up in various parts of the country, and has definite perils for the medical profession. Thus far it has been confined largely to the South, the West and the Southwest, but there is no reason for that matter why it should not invade any section of the land. For it is a child of the depression, and the depression, unluckily, is with us all.

Hard times drive the man of nimble wits into new fields, and some of these "hustlers" have been working in the West and South, trying to skin the dollars off from contract medical schemes. One of

these men will enter a city or county, stage a drive for members with canvassers, newspaper advertising and what not. "No more doctor bills to pay!" he advertises. "Relieve your mind of all worry for a total cost of five to eight cents a day. Full medical and surgical care, hospital maintenance, medicines, x-ray, dental work," etc., etc. When he has recruited his membership to a figure of several thousands, he approaches physicians who are feeling the pinch of hard times and easily builds up a staff of men tempted by the lure of stable incomes. What these men soon find, however, is that they are merely the hirelings of a business group, with a business manager, solicitor, adjuster, and advertising agent, all on the make, and taking the toll from both doctor and patient.

This is not a picture imagined by some alarmist, but is a factual account of what is now happening, related by Dr. Harry S. Nicholson, of Pittsburg, in an address before the Homeopathic Medical Society of Pennsylvania. The next chapter in the story comes naturally. Another hustler, envious of the success of the first, organizes a rival contract group in the same city at lower rates, and a rate-war begins, with the doctors of the two groups forced to make more and more calls at less and less pay. Jealousy, hostility, backbiting arise, good medical service becomes impossible, and the promoters sell out to anyone who will buy and leave to organize new groups elsewhere. Some of them may easily be now headed in this direction.

At the other end of the scale we have contract doctors employed by some of our largest and best corporations who have done splendid work in the investigations of industrial diseases and in maintaining the health of workers too careless to consult a physician until too late, if left to do it themselves.

Between the top and bottom of the scale we have many light and dark shades from the white to the black. Evil creeps in where commercialism becomes dominant. Today we see, in various parts of the country, contracting physicians, contracting groups, insurance companies, hospital associations, and all kinds of clinics with medical service to sell. There are said



to be 553 different insurance organizations furnishing hospital or medical services, or both, in the United States today. One doctor related, in the discussion following Dr. Nicholson's address, that at one time he signed up as doctor for a fraternal organization and found he was required to make as high as 40 calls a day, and, he remarked, "you can readily see that, making 40 calls a day, your attention to each family is practically nothing." After leaving this work to take up a practice of his own, he took occasion to look into the matter and found that the fraternal organization collected \$14 a year from each of its families, of which "one dollar goes to the doctor and \$13 go for maintenance and for putting up a million dollar organization."

A little analysis of the situation shows that the evils arise when lay management is in the saddle, trying to "work" the doctor to squeeze out the profits. That way lies ruin for the physician, for the patient, and eventually for the scheme itself. Only plans that keep the medical man his own master can endure.

### Maladies of Musicians

It seems an irony of fate that those devoting their lives to producing harmonies for the pleasure of others should in the process afflict themselves with physical and psychic disharmonies that "by and by will make the music mute." The more successful the player or singer, the harder he must practice, the more he must use the delicate muscles, cords, nerves, that work in unison to make the concord of sweet sounds. If his violin string frays, he can put in a new one in two minutes, but if a muscle cramps, if a sore spot develops anywhere, he carries no spare parts for replacements. He must resort to his doctor, who then finds that he will do well to know something about the maladies of musicians.

Every town and city has its musical devotees, amateur and professional, and nearly every physician has one or more of these on his list, who may appeal to him for help at any time. Yet little has been published on this intriguing subject. Dr. J. Flesch, of Vienna, has written a book on "Berufskrankheiten des Musikers,"

and Dr. Kurt Singer, in this country, is the author of a work on "Diseases of the Musical Profession." A Maine physician, Dr. Samuel H. Kagan, has gleaned a number of facts from these books, and enriched them by interviews with professional musicians, to produce an entertaining and instructive article in the *Maine Medical Journal*. One of his informants is Dr. Harry Shilkert, of New York City, who is at the same time a doctor and an accomplished musician, and is well fitted to throw light on the subject.

No matter whether the musician produces his harmonies from strings, wind instruments, percussion instruments, or the delicate cord of his own voice, he is liable to find trouble. The violinist or the pianist feels his hands losing their skill, the singer finds that his larynx muscles no longer respond. The injury, too, may spread to inflame neighboring sheaths and tissues, and when one muscle balks from fatigue, others are called in to aid until they also overtire and the inflammation affects a wide area. The orchestra director finds that his hand and arm will no longer beat time, his legs cramp and lose their spring, and instead of inspiring his orchestra to flowing rhythms, he presents an awkward and pathetic figure.

The singer who has to perform in halls that are now chilly and drafty, now overheated and filled with tobacco smoke, who has to sleep on trains, snatch hasty meals of all kinds, and live the life of a high-grade tramp, will almost certainly pay the price in laryngitis and trouble with the vocal cords, such as "singer's nodule," or corn. Many of the singer's vocal ailments have a nervous basis and can be made worse by the very worry they cause, and made better by rest and mental calm.

The pianist often suffers from cramps due to the acute flexion of the wrists in playing octaves, especially when the wrists are weak. Ganglions of the wrist may result. "Apparently," remarks Dr. Kagan, "the family Bible is still used to rupture these swellings, from various comments heard." The old method of piano teaching, where the player sat with his body as stiff as a ramrod, led to fatigue, muscle pains, and cramps in the shoulders and spine, often misnamed "neuritis." In the modern method the body sways with the swing of

the hands up and down the keyboard, and the spine is relaxed.

Violinists, it seems, develop ganglion of the wrist from the acute flexion used, and the fingers and hands develop cramps, weakness, and paralysis. Not only are both hands liable to be affected, but the legs and shoulders may develop pain due to wrong posture, and too much inclination of the head, with severe overexertion of the neck and shoulder muscles, sometimes results in permanent torticollis. Pressure of the jaw on the violin may cause bruising and perhaps ulceration, and infection of the skin may arise from sensitivity and irritation from sweat. Bass violists, we are told, develop blisters, callouses, and tears of the skin of the fingers from the peculiar slap and plucking of the strings known as "jazz slap."

Cornetists and players of other wind instruments have affections of the lips and mouth, as will be readily understood. Blowing wind instruments is beneficial to the lungs, we are assured, except when the player already has tuberculosis; then "one should advise against the use of wind instruments, as it is the opposite of stabilization of the lungs." Trumpet playing, too, aggravates asthmatic conditions and so tends toward emphysema, which may result in incapacitation. Cases of otitis media may be exacerbated by wind instruments.

Accurate diagnosis, says Dr. Kagan, requires a thorough physical, neurological, and often psychological examination. Fatigue is usually due to faulty methods. Rest periods during practice are important. Reeducation of the muscles may be required. Massage, hydrotherapy, and active and passive exercises are useful. For acute pain and cramps, heat, as by diathermy, baths, lights, is of benefit. Medication is declared of little use, and electricity "is of questionable value." Dr. Kagan cautions against fat applications for the lips, as they cause the mouthpiece to slide about, which is serious. Surgery of the lips, too, should be avoided, as it may spoil the lips, even if it gets a perfect anatomical result, because of the neurosis established from worry and fear of inability to get notes.

It is easy to imagine the thrill of horror that stabs the soul of the musician when he feels a paralyzing cramp that threatens to halt his career, and it is a source of gratification to the physician when his skill can restore the power to create harmonies in a world where harmony is supremely needed.

PEDIATRICS

The coming Regional Conference of the Academy of Pediatrics and the Tri-City Pediatrics Group will be held on October 19 and 20, 1934, at the Hotel Ambassador in New York City and at the New York Hospital.

PROGRAM OF THE ANNUAL MEETING  
FIRST DISTRICT BRANCH  
MEDICAL SOCIETY OF THE STATE OF NEW YORK

The 28th annual meeting will be held on October 24, 1934, at the Forbush Inn, Peekskill, N. Y. This branch comprises the County Societies of Bronx, Dutchess-Putnam, New York, Orange, Richmond, Rockland, and Westchester.

THE PROGRAM

1. Address by the President of the Medical Society of the State of New York.....*Arthur J. Bedell, M.D., Albany*
2. Paper: "Medical Welfare Administration".....*Joseph S. Lawrence, M.D., Executive Officer of the Medical Society of the State of New York*  
Discussion: *To be opened by James E. Sadlier, M.D., Chairman, Committee on Public Relations of the Medical Society of the State of New York*  
*To be continued by: Aaron Sobel, M.D., Dutchess-Putnam County; Terry M. Townsend, M.D., New York County; William C. Buntin, M.D., Richmond County; Morley T. Smith, M.D., Westchester County; Maurice A. Magid, M.D., Bronx County*
3. Address .....*Amos O. Squire, M.D., Ossining*

ANNUAL MEETING OF THE THIRD DISTRICT BRANCH

On September 19, 1934 the Third District Branch of the Medical Society of the State of New York held its Annual Meeting at Livingston, New York, in the Potts Memorial Hospital, under chairmanship of the Branch President, Dr. Clark D. Rossman of Hudson.

About 77 members and guests were present, representing the seven counties that comprise this District Branch, Albany, Rensselaer, Schoharie, Greene, Columbia, Ulster, Sullivan.

In the forenoon there was presented a symposium on The Columbia County Department of Health as follows:—

Organization—

William D. Collins, M.D., Hudson; President, Columbia County Board of Health.

Relation to the Physician—

Frank C. Maxon, M.D., Chatham; President, Columbia County Medical Society.

A modification of the Detroit Plan in Administering Public Health—

Louis Van Hoesen, M.D., Hudson; Commissioner of the Columbia County Department of Health.

These three talks showed that a County Society and a County Department of Health can pool their knowledge, their thoughtfulness and their energies in harmonious fashion to preserve the health of the citizens of the County at its highest level. They will appear later in the JOURNAL.

Later Dr. Charles J. Hatfield, President of

the Potts Memorial Hospital and also Director of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis of the University of Pennsylvania at Philadelphia gave a talk on Rehabilitation of the Tuberculous at the Potts Memorial Hospital. He gave a brief summary of the establishment of the Hospital and outlined its methods. Dr. Henry A. Pattison, Director of the Hospital, and Dr. Leonard M. Neisen, Resident Physician, described the work in the Hospital, gave histories of interesting cases, and exhibited both slides and patients.

After luncheon, Dr. Arthur J. Bedell, President of the Medical Society of the State of New York, addressed the Meeting, explaining the work of the House of Delegates, the Council and the Executive Committee. He earnestly endeavored to correct some erroneous ideas that seemed to be current as to the work of these bodies.

The annual election of officers for the ensuing year then took place with the following result:—

*President*:—Luther C. Payne, M.D., Liberty.

*First Vice-President*:—Augustus J. Hambrook, M.D., Troy.

*Second Vice-President*:—Bertram W. Gifford, M.D., Saugerties.

*Secretary*:—William M. Rapp, M.D., Catskill.

*Treasurer*:—Ernest E. Billings, M.D., Kingston.

ANNUAL MEETING OF THE FOURTH DISTRICT BRANCH

On September 21st and 22nd the Fourth District Branch of the Medical Society of the State of New York held its Annual Meeting at the Sir William Johnson Country Club in Gloversville, under the chairmanship of Dr. Raymond G. Perkins of Malone.

At the first session on September 21st the following papers were read:—

1. The Clinical Diagnosis of Surgical Diseases of the Abdomen, Edward M. Livingston, M.D., New York.

2. Obstetrical Practice in Northern New York, Edwin M. Jameson, M.D., Saranac Lake.

3. Intracranial Hemorrhage, Wardner D. Ayer, M.D., Syracuse.

In the evening, following the dinner given by the Fulton County Medical Society at the Sir William Johnson Club the meeting was addressed by the following speakers:—

Address of Welcome

Walter R. Grunewald, M.D., President, Fulton County Medical Society.

Arthur J. Bedell, Albany, President, The Medical Society of the State of New

York.

Thomas Parran, Jr., M.D., Commissioner of Health of New York State.

The second session was held on Saturday morning, September 22, 1934. The following papers were presented:—

1. Diseases of the Colon, Richard B. Cattell, M.D., Boston, Mass. (by invitation).

2. The significance of Hematuria, William J. Kennedy, M.D., Gloversville.

3. The Heart Muscle with Advancing Years, Herman O. Mosenthal, M.D., New York.

The election of officers resulted as follows:—

*President*:—Dr. John P. K. Cummings, Ticonderoga.

*First Vice-President*:—Dr. Carl R. Comstock, Saratoga.

*Second Vice-President*:—Dr. Sylvester C. Clemans, Gloversville.

*Secretary*:—Dr. E. Harrison Osterby, Amsterdam.

*Treasurer*:—Dr. Sidney F. Blanchet, Saranac Lake.

# Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

## Operation—Foreign Body—Responsibility of Surgeon

A short time ago a case came before the courts of one of the midwestern states, in which a decision was made upon a matter of great importance to the members of the medical profession.

The plaintiff in the case instituted a malpractice action against a surgeon who had performed an operation upon her. She claimed that the surgeon was negligent in permitting a laparotomy sponge to remain in her body subsequent to an abdominal operation. For a proper understanding of the case it is necessary to set forth in some detail the facts surrounding the case:

The defendant was a surgeon of considerable experience, having performed nearly one thousand major operations. The plaintiff consulted him concerning her condition and a diagnosis was made of appendicitis and a retroverted uterus. The surgeon advised operation and the following day he operated. In the performance of the operation he made use of the regular operating room staff of the hospital, which consisted of another doctor, an interne and several nurses. All of the said people were either connected with the staff of the hospital or were employed by it, and none of them were either directly or indirectly in the employ of the defendant. The duty of Dr. C., the assistant, was particularly to hold the retractors keeping the wound open and to hand instruments to the surgeon. The duty of nurse A. was to administer the anesthesia and to make records of sponge counts. The duty of nurse B. was to hand the sterile sponges to the operating surgeon, as needed, and to keep count of them. The duty of nurse C. was to keep track of, and dispose of the used sponges.

The defendant made a usual midline incision about six inches long, below the navel, and packed away the intestines with hot laparotomy sponges, after which he removed the appendix and performed an operation upon the uterus. After that

had been completed he inspected the field of the operation, saw all of the pads, checked up on the sponge count (which was announced as correct), and having no further occasion to explore the abdomen, closed the wound in the usual manner. During the operation approximately fifteen to twenty sponges had been used.

The patient did not make a good recovery from the operation and her complaints led, some months after the operation, to examinations which disclosed the presence of a foreign body. She was operated upon and a laparotomy sponge was found in, and removed from her abdomen.

Her case against the physician came on for trial and the plaintiff proved that the foreign body had remained in her person subsequent to the operation performed by the defendant. After both sides had introduced their testimony, the Trial Court sent the case to the jury and among the instructions which were left with the jury was the following: "The Court instructs the jury that a surgical operation begins when an opening is made into the body of the patient and ends when the opening has been closed. The removal of the sponges inserted by the surgeon is a part of the operation, and if the jury believed from the evidence that the defendant inserted and then negligently left a pad or sponge in the plaintiff's body, and if you further find from the evidence that the plaintiff thereby sustained damage, then the plaintiff is entitled to a recovery." Under that instruction the jury found, as seems to have been inevitable upon such an instruction, a large verdict in favor of the plaintiff. An appeal was taken from this judgment and the Appellate Court adopted a different view from that taken by the Trial Court, and reversed the judgment in favor of the plaintiff.

The Appellate Court, in reviewing the testimony, found that the following pro-

cedure had been followed at the hospital in dealing with the sponges that were used by surgeons performing operations such as the one in question:

"The sponges were made by the nurses at the hospital, counted, put up in packages, and sterilized. Laparotomy sponges are larger than the other sponges used, and are put in packages of three. The smaller sponges are put in packages of twelve. Before beginning an operation, the sponges are brought into the operating room by the nurses whose duty it is to handle clean sponges. They are counted by her, and as needed, are handed by her to the surgeon, forceps being first attached to the laparotomy sponges. As the sponges are used, they are thrown into a receptacle by the surgeon and taken charge of by a nurse, who places the small sponges in piles of twelve, and the used laparotomy sponges in piles of three. When the operation is finished, and before the incision is closed, the unused sponges are counted by the nurse in charge thereof, and the used sponges are counted by the other nurse. The total of the two counts is compared with the number brought into the operating room, in order to ascertain if all sponges are accounted for. The nurse in charge of the clean sponges announces whether or not the count is correct. If announced correct, the anesthetist immediately makes a written memorandum of the count on the operation record. This method was followed in full not only by the defendant, but by all surgeons operating at St. — Hospital and was used in the instant case. The small sponges are used to sponge up the blood and secretions and in operations upon the appendix or uterus the large pads, or laparotomy sponges, are placed in the abdomen, to keep back the mesentery, or contents of the abdomen."

The Appellate Court found that the testimony that had been introduced on behalf of the doctor had established that it was necessary to use sponges in the operation performed by him and that such sponges sometimes become soaked with blood and secretions and may have the general appearance of tissue and that they are not readily seen or felt and further

that in performing an operation such as was performed in this case the surgeon must think and act quickly and that it would jeopardize the life of the patient for the surgeon to take sole charge of counting the sponges and, therefore, of necessity, the counting of the sponges is a matter which must be delegated to the surgeon's assistants.

In deciding that under the circumstances presented in this case the defendant was not to be held liable in damages, the Appellate Court said:

"Notwithstanding the apparent care exercised by the nurse to make a correct count of the sponges, a mistake was made by one of them. It is immaterial which one made it. The crux of the case is whether or not the defendant is responsible for the mistake and can be mulcted in damages on account of it. . . . Generally an operating surgeon is not legally responsible for the mistake of a nurse in his employ where an operation is performed in a hospital not owned or controlled by the surgeon.

"All classes of hospitals have at least one power in common. It is the right to prescribe reasonable rules for the conduct of the institution and may standardize the hospital. The hospital was a charitable institution and maintained its own corps of nurses, internes and staff officers. A physician who used the operating room was required by the rules of the hospital to employ the equipment of the hospital. In the case of the particular operation, it included the nurses in attendance, the sponges supplied, and the records kept. Every physician who avails himself of the privilege of operating in a hospital of this character must conform to the rules of the hospital, and unless he does, he may be deprived of the privilege of practicing at that institution.

"Charitable hospitals being generally established through motives of philanthropy the right of admission rests solely in the discretion of the hospital authorities. No one has individually a right to demand admission. But if he is admitted, he impliedly consents to abide by the reasonable rules and regulations of the hospital, the same as his physician does.

"It is indisputable that the operation involved in this case was conducted, so far as the defendant's conduct was concerned, in strict accordance with the established rules and customs of the hospital. It is not denied that he endeavored to see that the rules of the institution concerning the count of sponges were carefully and correctly carried out. That a mistake was made by one of the nurses was no fault of his and appears to have been made in spite of his caution. He inquired about the count and was informed that it was correct. He made an ocular examination without discovering the error. He followed the approved method of examination unless it is known that a sponge is missing. Under all the circumstances we do not see how he could have been expected to do more."

This decision is an extremely fair one and is in harmony with the views recently expressed, in a similar situation, by the Court of Appeals of this State.

### Claim of Improper Amputation of Fingers

A woman 29 years of age was injured in an automobile accident and brought into a hospital for emergency treatment. A surgeon was called in to attend her and found that she was suffering from severe injuries to her left hand. Her middle finger was practically amputated and the blood circulation was apparently cut off, and it was also badly lacerated, and her ring finger was similarly injured. The doctor told her that an immediate operation was necessary and that it was impossible to save the middle finger, and that she would have to leave it to his judgment as to what was best to be done with the

other injured finger. She consented, and an operation was performed under ether. On more careful examination the doctor found the middle finger practically amputated by the trauma of the accident at a point through the middle of the second phalanx, the second phalanx being fractured and the proximal phalanx being wide open. The finger was extensively lacerated on the palmar surface. The ring finger disclosed extensive lacerations on the palmar surface, compound fracture of the middle phalanx, both distal and proximal phalanx joints were opened up and the flexor tendon severed and partially destroyed. In the doctor's judgment the blood circulation in the ring finger had been so interfered with that unless he amputated the finger, gangrene would eventually develop. He accordingly amputated both said fingers and carefully resected anterior and posterior flaps in order to get smooth surfaces. He found it necessary to take several stitches in treating the patient's little finger. The patient made an uneventful recovery without infection, and left the hospital in five days after the operation.

Subsequently she brought an action against the surgeon in which she charged him with having amputated her fingers without her consent. She claimed that the damages which she sustained in the matter were especially great due to the fact that she was a stenographer. The case came on for trial before a Judge and a jury, and at the conclusion of the testimony the issues in the case were submitted to the jury.

A verdict was returned in favor of the defendant, thereby exonerating him of the plaintiff's charges in the matter.

### X-RAY DEVELOPMENT

An x-ray apparatus which permits chest plates to be taken at as high a rate as 150 an hour at a cost as low as 30 cents each is described in the *New York Times*. The apparatus was invented by a New York City photo-engraver, in order to make cheaper chest plates available for public health work in tuberculosis. The Queensboro Tuberculosis and Health Association used the apparatus to x-ray 11,000 school children's chests, and the Bellevue-Yorkville

Health Center had 1,000 others done. The plates are of paper mounted in rolls. The entire apparatus is on a mobile truck.

A London comic weekly tells of a patient who said to his physician: "My wife tells me I talk in my sleep, doctor. What should I do?" To which the doctor replied: "Nothing that you shouldn't."

## ACNEFORM ERUPTIONS

*With Remarks on Acne Vulgaris and Its Pathogenesis*

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## Part I

PILOSEBACEOUS IRRITANTS, OBSERVATIONS IN ACNES OF KNOWN EXTERNAL AND INTERNAL ORIGIN, AND PARTICULARLY IN ACNES DUE TO HALOGEN INGESTION, FOLLICULAR ACNEFORM RESPONSES TO PATCH TESTS

As the follicle is frequently the primary site of the pathologic process in acne of known external etiology, in acnes in which internal administration of bromides and iodides is the eliciting cause, in acneform eruptions due to the products of the tubercle bacilli, and in the ordinary form of comedo acne or *acne vulgaris sive juvenilis*, it seems permissible to discuss these conditions as a group. Moreover, the choice of this grouping is motivated by certain analogies which will be the object of further discussion. The grouping is, of course, more or less arbitrary, with no intention of implying that the pathogenetic process underlying these forms is necessarily the same.

Among the external causes of acne, chlorine gas, tars, oils, waxes and greases are well known offenders. As prototypes of acne of external origin three recently observed cases may be cited.

Two young men and a young woman, all three without previous attacks of acne although in the acne ages (18, 23 and 27, respectively), all employed by the same firm and in the same kind of work, became suddenly afflicted with severe acne. These acne eruptions had begun within two months after the patients had commenced working at a job involving contact with hot oils and waxes, which not only touched the exposed parts of their skin, but also permeated their clothing. The patients

stated that, of approximately 100 other employees at the same work, over 40 were similarly and abruptly affected with the same form of acne dermatosis. The three patients we examined presented a classic but very severe widespread comedo acne of the face, forehead, cheeks, chest, and back, with papules, pustules, and cystic lesions (see Fig 1). Many lesions were also found in atypical localizations, on the arms, forearms, and thighs.

In spite of cessation of contact with the harmful agents (these patients did not return to work), and despite the most intensive treatment, the pathologic condition continued for an astonishingly long time (7 months, 1 year, and over 1 year, respectively).

At various sites and at varying intervals of time, patch tests performed on these patients, with the very waxes and greases with which they had come into contact, did not reproduce the acneform eruption, nor did they cause an eczematous response, nor in any way give evidence of a hypersensitivity of the skin to the materials applied.

These cases illustrate the clinical action of a substance with a capacity and a predilection for causing irritation of the pilosebaceous apparatus. Such a substance can produce the entire picture of a typical acne vulgaris eruption, including the comedo, papule, and pustule, the more cystic and deeper lesions, and the end result in characteristic pitted scarring.

These cases also demonstrate other important points. First, that the acne eruption may persist with surprising chronicity and refractoriness to therapy, even after the proven causative substance, and, second, that the application of a patch test, with

the actual causative agent of the acne, need not necessarily be successful in the experimental reproduction of the dermatosis.

The second group of acneform eruptions consists of those not due to pilosebaceous irritation from without, but to the hematogenous distribution of the pilosebaceous irritant. Bromides and iodides are well known causes of such eruptions. That these halogens (as well as other substances distributed by the blood stream) can cause acneform eruptions seems to be dependent, first upon the fact that the rich circinoid arrangement of blood vessels and the hemodynamic phenomena around the follicles are particularly conducive to a concentration of circulating substances at these

Tenchio.<sup>4</sup>) On the other hand, particularly in *acneform* eruptions due to halogens, we observed not infrequently a response to the patch test, not of diffuse and eczematous character, but distinctly follicular and acneform in appearance, closely reproducing the follicular acneform eruption from which the patient was suffering (Figs 2 and 3).

As far as we know, the observation of this *acneform* response to patch test in cases of acneform eruptions has not heretofore received attention. This form of reaction would seem to be of importance as an indication that a certain substance possesses a particular capacity for irritating the pilosebaceous apparatus of the



Fig 1—Acne due to external contacts with grease and oil.

sites (Jadassohn<sup>1</sup>) second, that these halogens tend to be excreted through the sebaceous glands (R. O. Stein,<sup>2</sup> Kleeberg,<sup>3</sup> and others); and third, that these substances, for some as yet unknown reason, seem to possess a special capacity for irritating the pilosebaceous apparatus.

As evidence of the existence of this third factor, it may be stated that during the last two years we have tested all our cases of bromo- and iododermas by means of patch tests, with ointments containing 25 and 50 per cent potassium iodide and potassium bromide, respectively. In several cases, the patch test produced an eczematous response of diffuse and non-follicular nature. (This, to a certain degree, confirms the findings of Bloch and

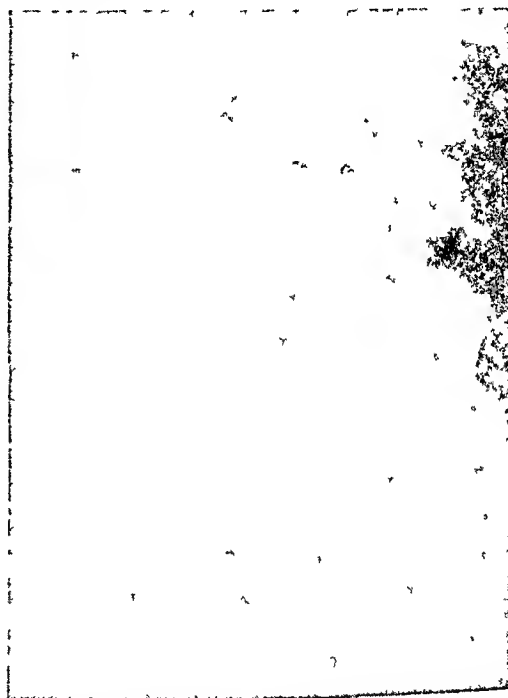


Fig 2—Acneform responses to patch tests with bromide and iodide on previously unaffected skin of chest of patient with acne vulgaris

patient, or, stated conversely, as evidence of a hypersusceptibility of the patient's pilosebaceous apparatus to the particular substance applied.

Two further observations seem of interest in this connection. The first is that chronic iodide and bromide acnes can be clinically almost indistinguishable from acne vulgaris (Fig. 3). We have seen such cases due to the chronic ingestion of iodized salt or to the very occasional use of bromides. The second observation is that, even in classic cases of acne vulgaris, in which it was impossible to elicit any



history of halogen ingestion, and which were in no way to be suspected of a drug etiology, bromides and iodides occasionally elicited an acneform and follicular response when applied by means of patch test (Fig. 2).

The third group of follicular and acneform eruptions, namely, those due to the hematogenous distribution of the tubercle bacillus and/or its products, would seem to have many similarities as far as the mechanism of their genesis is concerned, with the hematogenous halogen acnes. For example, lichen scrofulosorum, better called tuberculosis lichenoides, which is probably one of the most common forms of tuberculid, is characterized by its predilection for follicular localization,

most indistinguishable from acne rosacea, namely, that known as the *rosacea-like tuberculid* of Lewandowsky.\* (For a complete report on this form of tuberculid, see MacKee and Sulzberger.†)

The analogy between these tuberculous acnes and the halogen acnes is obvious. In the one case, the products of the tubercle bacillus, hematogenously distributed, selectively irritate the pilosebaceous apparatus. In the other case, the circulating halogen produces this effect.

At the Post Graduate Hospital, within the past four years, we have routinely tested a large number of patients (more than 100) with tuberculin patch tests. Many of the positive reactions to these



Fig. 3.—Iodide acne closely resembling acne vulgaris. (Note acneform response to iodide patch test on chest.)

Furthermore, most dermatologists now agree that the tubercle bacillus and/or its products can, in certain exceptional cases, produce eruptions so closely simulating acne vulgaris that it is in some cases impossible to differentiate clinically between them.

A third type of acneform eruption of tuberculous etiology is one which is al-



Fig. 4.—Acneform reaction to patch test with old tuberculin on previously unaffected skin of patient with acneform tuberculid. (Rosacea-like tuberculid.)

tests were of the follicular type. This form of reaction has been the rule, particularly in the *acneform tuberculids* and in lichen scrofulosorum (Fig. 5). The follicular response to tuberculin patch tests indicates that the statement made above, in regard to bromine and iodine, applies to tuberculin as well. For tuberculin would seem to be a substance possessing a particular capacity for irritating the pilosebaceous apparatus of certain individuals;

\* The chronic use of iodides and bromides can produce not only acne vulgaris-like eruptions, but also clinical pictures resembling acne rosacea and rosacea-like tuberculid.

or, stated conversely, there is, in these individuals, a particular hypersusceptibility of the pilosebaceous apparatus to tuberculin.\*

While the acneform eruptions discussed are not excessively rare, the fourth group, acne vulgaris, is of far greater frequency and, therefore, of far greater practical interest. Unfortunately, the present knowledge as to the pathogenesis of this condition is, to say the least, deplorably limited. The older theory of the bacterial etiology of acne vulgaris remains unproved and, to a great degree, discredited; the disease cannot be reproduced experimentally, in man or in animals, by means of the accused micro-organisms (Stein<sup>2</sup>). The newer theories dealing with the endocrine nature of the disease are vague and require crystallization and confirmation.

In view of this lack of knowledge, research into the cause of acne has lacked direction and guidance. It would, therefore, seem permissible and even desirable to suggest a working hypothesis which might prove of some value, if only in stimulating investigations along organized lines. From many hypotheses suggesting themselves, it seemed necessary to us to select *one* suitable for experimental investigation.

The hypothesis we have chosen includes the above outlined observations in acneform eruptions of known etiology, and it seeks to establish a common or related pathogenesis in acnes known to be of external causation, acnes known to be due to circulating hematogenous noxae, and acne juvenilis.

## PART II

### A WORKING HYPOTHESIS FOR THE STUDY OF ACNE VULGARIS

From the phylogenetic and ontogenetic points of view, the sebaceous glands and the hair follicles are to be considered invaginations of the surface epithelium. The cells of the hair bulb continue to undergo the same changes as those of the surface epithelium, namely, the changes of cornification; the sebaceous gland cells become differentiated in that they undergo not horny but fatty alteration, and these fatty cells form the secretum (holocrine secretion). It is obvious that an irritative

stimulus with a capacity and predilection for affecting the pilosebaceous apparatus may produce hyperactivity: (a) of the sebaceous gland; (b) of the hair bulb; and (c) of the follicle wall and the epidermis at the points where the invagination takes place. It is, in particular, the hyperactivity of the epidermis of the follicle mouth, which seems to play a leading rôle in the formation of the primary lesion of acne vulgaris, namely, the comedo. For, as Kyrle,<sup>4</sup> Stein,<sup>2</sup> and others have shown, the first step in comedo formation is the epithelial irritation leading to *hyperkeratosis at the follicular mouth*, which gradually narrows the follicular orifice and finally forms a horny plug in the ostium. The hyperkeratosis and occlusion of the follicle, plus a hypersecretion of the simultaneously irritated gland, bring about the formation of the sebaceous and horny plug known as the comedone.

It is our opinion that variations in this mechanism may, in themselves, be sufficient to cause the entire picture of acne vulgaris and the accompanying (and frequently preceding) seborrhea. For one may have: (a) stimulation of seborrheic glands, with as yet unoccluded follicles, giving rise to seborrhea; (b) occluded follicles forming comedones (see Kyrle<sup>4</sup>); and (c) occluded follicles with hyperactive glands, in which the dammed-up secretum and any adjuvant substances coming from the circulation and excreted with the sebaceous material necessarily become concentrated.

This concentration of possible irritants and/or the mechanical irritation from pressure alone could, possibly, account completely for the subsequent lesions of papules, pustules, and abscess. It cannot be denied, however, that micro-organisms may play a rôle in the formation of the inflammatory and pyogenic development of the lesions. Such micro-organisms—as acne bacilli, staphylococci, micrococci, pityrospores, bottle bacilli, demodex, etc.—not obligatory pathogens and normally found saprophytically on the skin and in the ostium of the follicle, become imprisoned within the follicle, under the horny plug. In this manner, these organisms may meet favorable conditions for growth and for the development of pathogenic activity in a follicle already damaged by stagnation and pressure. Or, the circulating substances may, in other ways, aid the pathogenic activity of bacteria (see Haxthausen, quoted by

\* Similarly, trichophytin and oidiomycin patch tests are likely to produce follicular reactions.

Stein,<sup>2</sup>); or, on the other hand, the hypothetical substances may cause irritation only in follicles already abnormal, for instance, with anatomically deficient outlets. While these possibilities must naturally be considered, it does not seem to us that the action of the bacteria in acne can be primary; nor does our hypothesis necessitate the assumption of any bacterial activity whatsoever nor of any antecedent anatomic abnormalities. Both of these factors are unproved and would necessitate additional and complicating hypotheses.

If one sees as a primary cause of acne vulgaris a circulating substance or circulating substances with the capacity and predilection for stimulating, exciting, or irritating the pilosebaceous apparatus in certain predisposed individuals, it is obvious that close analogies exist between acne vulgaris and acneform eruptions due to the halogens and tuberculosis, and also those due to external pilosebaceous irritants.

It follows that one must look for the cause of acne vulgaris, either in the abnormal quantitative or qualitative presence of pilosebaceous stimulants or, in an abnormal susceptibility of the pilosebaceous apparatus to such stimulants, or in a combination of these factors.

In other words, to prove our hypothesis we must find either a substance or substances pathologically (quantitatively or qualitatively) present in acne vulgaris; or some substance or substances found and normally innocuous, but to which the pilosebaceous apparatus of acne patients can be shown to be hypersusceptible, or both.

Observations of the clinical course of acne vulgaris have naturally directed attention toward a certain group of possible causative agents. While acne vulgaris is practically unknown in infants and young children, it is an exceedingly common manifestation in the years immediately preceding sexual maturity and in early adolescence. A mild degree of acne is almost physiological in these years. Brimo Bloch<sup>7</sup> examined 2,136 girls between the ages of six and eighteen years, and 2,055 boys between the ages of six and nineteen years. He found that comedones began to appear in these children between the ages of six and seven; and that, at the age of seventeen, 80 per cent of the girls had some degree of acne; and that, in boys, the condition developed earlier, so that, at thirteen years of age, 71 per cent of the boys were affected. He found, further-

more, a synchronous appearance of acne lesions and of pubic and axillary hair, and, in girls, of the first menstruation. These figures compose a statistical substantiation of the accepted clinical fact of the obvious connection between the awakening of the sexual endocrine activity and the appearance of acne vulgaris.

Bloch's findings showed not only that acne begins earlier in males, but that severe cases of acne were more than twice as common in boys as in girls, at nineteen years of age, there were 5 boys with severe acne to 2 girls with cases of equivalent severity. This finding fits in with our hypothesis. It would seem to indicate one of two things: either, that the male possesses intrinsically a follicular apparatus more sensitive to hormonal stimulation, and with a greater capacity for reacting to such stimuli, or



Fig. 5—Exacerbation of acne vulgaris after 48 hours of ingestion of moderate doses of KI. The face was practically clear before this medication.

that more hormonal pilosebaceous stimulants (irritants) may be formed in the male than in the female. The formation of the beard and the heavier body hairs in the male would tend to substantiate this concept. True eunuchs, that is, those emasculated before puberty, generally have no beards or very sparse beards, and their growth of secondary sexual hair is likely to be of the female type. It has further been established that true eunuchs do not become bald. (In the 340 eunuchs examined, no sign of seborrheic alopecia could be found—Sabouraud<sup>9</sup>). This observation seems to us to be of primary importance and can perhaps be explained in accordance with the theory that the male type of baldness is, in some way, the result of repeated overstimulation of the pilosebaceous apparatus of the scalp (see Hebra, Kaposi, Riehl, and others quoted by R. O. Stein,<sup>2</sup> page 62),

and that this overstimulation is, in turn, dependent upon male gonad activity.

There are yet other observations in acne vulgaris, which point to the circulating products of endocrine glands as being, in some manner closely connected with the development of the disease. There are numerous reports dealing with this subject. In this country, L. Hollander<sup>10</sup> and Schamberg,<sup>11</sup> among others, have called attention to observations suggesting such a connection. More recently, Kurzrock and Rosenthal<sup>12</sup> reported that the urinary excretion of estrin was subnormal in women suffering from acne. It is frequently observed that acnes exacerbate cyclically in connection with the menses; and that some cases are combined with dysmenorrhea. The acnes of older women (chin acnes, etc.) appear in a preclimateric manner, at the time when there is, according to endocrinologists, not infrequently a terminal endocrine dysfunction. Pregnancy often affects the pilosebaceous apparatus; and the influence of the pregnancy upon the acne dermatosis, as well as upon seborrheic conditions, may sometimes be apparent. Just as acne vulgaris does not occur before the beginning of sexual activity, so also the disease does not exist in the aged.

In view of all these considerations, it seems a logical conclusion that the products of the gonads and/or of other endocrine glands in which there is increased or altered activity at the time of puberty, of pregnancy, and of menopause, either directly or indirectly contribute to the stimulation of the pilosebaceous apparatus; this stimulus physiologically produces the beard and the secondary sexual hair; and, in some cases pathologically, the formation of the comedo, and thus lays the foundation for acne. (Not only the sebaceous glands undergo such hormonal stimuli, but the embryologically related apocrine glands and the mammary glands of the female are synchronously and similarly stimulated.)

According to the concept outlined, acne vulgaris (and seborrhea and baldness, which are so frequently and familiarly associated with this dermatosis) would seem to be based upon an aberration in the normal and physiological process of hormonal pilosebaceous stimulation.

There are certain guides which can be used in the search for the hormone or hormones which may be actively engaged

in the stimulation of the pilosebaceous apparatus. During the last months of intra-uterine life, there is a marked stimulation of the epithelium and particularly of the hair bulb and the sebaceous glands, which leads, as is well-known, to the formation of the vernix caseosa and the lanugo hair of the fetus. This hyperactivity ceases with birth, and both the vernix caseosa and the physiologic hyperkeratosis of the newborn rapidly disappear.

At first glance, it may appear to be no more than a chain of remarkable coincidences that the stimulation of the fetal pilosebaceous apparatus (vernix caseosa and lanugo hair) should occur at precisely the time when the maternal, and probably also the fetal, circulation contain the highest level of certain sexual hormones (*e.g.*, prolans, estrin); and that the hyperactivity of the pilosebaceous apparatus should cease abruptly when the infant is cut off from its supply of maternal hormones; and that there should be a renewed hyperactivity on the part of the pilosebaceous apparatus at precisely the time when the individual begins to produce his own sexual hormones. But this chain of events ceases to be merely an extraordinary coincidence, and becomes a basis for experimental investigation, when one hypothesizes the direct or indirect causal relationship between the hormones and the stimulation of the pilosebaceous apparatus.

### Part III

#### PRELIMINARY EXPERIMENTAL REPORT

Two possible modes of approach presented themselves for experimentation along the lines of our hypothesis. The first, to attempt to demonstrate, in cases of acne vulgaris, a pathologic quantitative or qualitative hormonal aberration, particularly in regard to the hormonal content of the blood stream, the skin, and the pilosebaceous apparatus. The second, to attempt to demonstrate a hypersusceptibility of the pilosebaceous apparatus of acne patients, directed toward normal hormones or their derivatives or constituents.

We have chosen to begin with the second of these approaches. It seemed possible that increased thyroid activity, frequently coincidental with increased gonad activity and leading to increase in circulating thyroxin (the iodine-containing hormone), might explain acne vulgaris as essentially of the same nature as a very chronic iodide

acne. To investigate this possibility, patch tests with both thyroxin and iodide ointments were applied in the usual manner in 75 cases of acne vulgaris. None of these cases reacted to the thyroxin test, and only 4 reacted to the iodide. However, in these 4, the patch test produced typical and persistent lesions in the previously unaffected areas to which the iodide test had been applied (see Fig. 2). This number of positive reactors even to strong (50 per cent) potassium iodide tests is too small to be considered as strengthening the possibility that acne vulgaris is essentially a modified iodide acne (thyroxin-derivative acne).

Nevertheless, before coming to the conclusion that these results entirely contradict the possible rôle of iodine compounds in acne vulgaris, a continuation of experiments and modifications of technique seem indicated. This is particularly apparent when one remembers that many true iodide and bromide acnes do not necessarily give positive reactions to iodide patch tests; and that even in cases of acne due to external irritants, we were unable to elicit a positive reaction by means of the patch test application of the causative substances.

In a second series of experiments, we attempted to study the possible effect of iodides in acne vulgaris, not by external application of patch tests, but by ingestion and hematogenous distribution to the skin and pilosebaceous apparatus. In 20 cases of moderately severe acne vulgaris, in which there was no history of halogen ingestion, and in 21 control individuals (persons without acne), potassium iodide was given by mouth and in moderate doses (3 teaspoonfuls daily during two weeks, of the following: potassium iodide, 10.0 in aqua, qs. ad 120.0).

In 20, i.e., 100 per cent of the acne vulgaris cases, the ingestion of iodide as prescribed caused, after 2 to 3 days, distinct exacerbations of the dermatosis, with the formation of many new lesions, and flare-ups of existing ones. (See Fig. 5.) In some cases, only previously affected areas, i.e., the typical acne sites, were affected; in others, a few acne lesions appeared in previously unaffected sites and in atypical localizations, for instance, on the forearms, buttocks, etc. (It seems noteworthy that these patients had all had negative patch tests to iodine in various forms. In some of them, such patch tests, repeated after the appearance of the exacerbation caused by

KI ingestion, still failed to elicit a positive response.)

*In only one of the 21 control cases did the administration of this amount of the iodide produce acne lesions; and in this one, only two small papules appeared on the forehead after two weeks of the iodide medication (the patient stated that he had had similar lesions in the past).*

This experiment shows that patients with acne vulgaris differ from the norm in their reaction to iodides; and that their pilosebaceous apparatus is pathologically hypersusceptible to the direct or indirect effects of the drug. 1. *It is impossible to interpret this finding or, at present, to discuss the possible relationship of the demonstrable iodide hypersensitivity to the actual causative factors in acne vulgaris.* 2. *But this clinical fact remains: relatively small quantities of ingested iodides regularly produce new lesions and exacerbations of acne in acne patients.*

It was a logical consequence to the above results to have the third investigative measure consist in the attempt to treat acne vulgaris as though it were actually an iodide or bromide acne; and to see whether the results of this therapy would be sufficiently favorable to serve as a therapeutic test. The therapy consisted in the administration of sodium chloride by mouth. We prescribed this in a form which we have found very effective in the treatment of iododermas and bromodermas, and which we believe to be superior to other methods of sodium chloride administration in these dermatoses. The patient is instructed to take 16 gm. of sodium chloride daily, in addition to the normal intake; administered in the form of 1 gm. enteric-coated sodium chloride tablets, as prepared for us and now marketed by Eli Lilly Co. The results of this therapy were extremely gratifying in a few cases, but on the whole did not produce the rapid amelioration so frequently seen in true iodide and bromide acnes. *The number of cases reacting favorably is too small for us to consider these results as proof of the possibility that acne vulgaris is a modified iodide acne.*

It must be remembered, however, that acne may persist for a very long time, even after the cessation of the action of the eliciting agents. This is shown, for example, by the persistence of the cases of acne of external cause for long periods

after cessation of contact with the eliciting agent. (See Part I.)

The next series of experiments was performed to determine whether or not acne vulgaris patients possess a pilosebaceous hypersusceptibility to various hormones other than thyroxin, and to substances other than iodides.\* For this purpose, we carried out patch tests in the usual manner, employing the following hormones and other substances on a series of 39 acne patients:

- (1) Potassium iodide 5 per cent in aqua dest., later replaced by KI 25 per cent in aqua dest.
- (2) Potassium iodide 5 per cent in lanolin, later replaced by KI 25 per cent in lanolin.
- (3) Lanolin.
- (4) Thyroxin, 1:1,000, in aqua dest.
- (5) Parathormone.
- (6) Acne vaccine (Parke Davis Co.'s combined).
- (7) Antuitrin S.
- (8) Follutein.
- (9) Amniotin.
- (10) Theelin.
- (11) Antuitrin.
- (12) Pituitrin.
- (13) Glucose 10 per cent in aqua dest.
- (14) Syrup. simplex.
- (15) Lugol's solution, 50 per cent.
- (16) Chocolate in lanolin.
- (17) Chocolate in talc.

All of these tests were negative. It must again be stated that we do not consider the negative results of these relatively few experiments as conclusive. Continuation and modification of method is here necessary. It is to be pointed out, in particular, that our list of hormones is incomplete: for example, no experiments were undertaken with progestin and intermedin. Furthermore, the solutions employed may have been too dilute, or possibly even too concentrated. In these experiments we were limited to the employment of the commercially available concentrations. It would seem desirable to repeat these experiments, and especially with stronger solutions.

It should also be remembered that the action of hematogenously distributed hormones may differ radically from that of externally applied hormones. Such a

difference in the action of hematogenously distributed and externally applied substances is the rule in many forms of drug eruptions, in which the external application or the injection into the skin frequently produces no reaction, while the ingestion even of small quantities of the same drug produces the dermatosis. This difference in reaction to externally applied and to ingested iodide has been demonstrated in the reported experiments in acne vulgaris. Such differences in reaction, though unexplained, are frequently encountered. The same difference of action of iodides may often be seen in *dermatitis herpetiformis*. In this disease the internal administration of iodides causes a high percentage of exacerbations of the dermatosis, while the patch test application elicits a decidedly lower percentage of positive reactions.

Unfortunately, and for obvious reasons, no attempt could, as yet, be made to study the possible effects of the internal administration of the hormones which were employed in patch-testing the acne patients.

In closing, we should like to point out that our hypothesis speaks not against, but rather in favor of the correctness of the clinical observation that certain cases of acne are harmed or even produced by drugs and foods, such as, for instance, iodides, chocolate, cheese, milk, etc. (See, for instance, Cleveland White.<sup>13</sup>) Perhaps substances other than hormones, for example, other metabolites, may play a rôle. For, if the follicular apparatus in an individual tends to become hypersensitive, such a hypersensitivity may be directed not to hormones, but to other substances; or, the existing hypersensitivity may become polyvalent and embrace in its scope other substances as well. Nor, as we have said above, do we wish to exclude absolutely the possibility that bacterial action enters into the pathogenesis of acne vulgaris; for the follicle and gland, first stimulated by hormonal or other influences, may then become more easily susceptible to bacterial noxae.

Furthermore, the beneficial effects of the best available modern acne treatment, namely, x-ray and desquamating procedures, obviously counteract the pathologic occurrences which we have outlined. The x-rays, by reducing the activity of the hyperstimulated gland and follicle orifice; and the desquamating measures, by removing the obstructive horny plug. These measures are still those of choice

\* Perhaps even more fully than thyroid hormone, theelin and the chemically related male sex hormone would fulfill many of the requirements of our hypothesis, e.g., (a) present in both sexes; (b) increase at the end of pregnancy; (c) varying amount secreted at different phases of the menstrual cycle; (d) absent in castrates; (e) promote cornification (vagina).

in acne therapy. Fortunately, excellent results may be obtained through their employment in the majority of cases of acne vulgaris. Where they fail, the sodium chloride treatment will occasionally bring success. Prolan injections will help in a certain number of acne patients. And other methods will help in yet other cases. However, a certain number still resist every known form of treatment.

It is to be hoped that a clearer understanding of the seemingly basic endocrinologic phenomena involved will lead, in the near future, to a more causal and effective therapy of acne vulgaris, and perhaps even to new and adequate methods for combating the closely related seborrheas and seborrheic alopecias.<sup>24</sup>

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200 WEST 59TH STREET

# DISCUSSION

DR. HERMAN SHARLIT. While we find it necessary to dissent from the validity of Dr. Sulzberger and his collaborators' procedures and the soundness of their hypothesis, we are indebted to them for a fairly complete selection of the clinical facts from which to discuss their hypothesis pro and con.

They point out that acne like papules occur (1) from the exposure to external irritants (greases), (2) the ingestion of iodides and bromides and (3) the toxins of tuberculosis, and while conceding that all these follicular

papules are not identical with those of acne vulgaris, they all represent pathology about the same anatomical structures. And without expressly saying so, they are accepting a sameness about all these lesions in terms of the function of these structures, hence, their reference to pilosebaceous apparatus, a functioning unit, not an anatomical one. The pilosebaceous apparatus in man is a vestigial organ harking back to the day when we were completely covered with hair. We have several million such units now feebly functioning to cover us with hair. Briefly, it is a hair root and a hair channel lined by modified skin and lubricated by an oil from a parenchymatous secreting organ emptying its sebum into this channel. It functions in response to stimulation like other organs and, like them, is exposed to overstimulation, understimulation, and mistimulation (irritation). But before considering the effects of stimuli on the pilosebaceous apparatus, we must thoroughly appreciate the prime importance of anatomical fitness to function. The follicular canal must be smoothly lined and the oil effectively lubricating. Grease rubbed into the follicular openings may readily destroy the anatomical fitness to function and under stimulation evidence this disability by the evolution of an inflammatory reaction: the papule. Ingested iodine is stored in the skin and excreted in the hair; in excessive quantities these are tissue irritants causing inflammatory reactions wherever they lodge. Iodides and bromides can produce not only follicular papules but destructive lesions of large areas of skin. The circulating toxins of tuberculosis do not limit their irritating action to follicles necessarily, other and bigger lesions of skin have been attributed to this species of irritation. All these circumstances are but evidences of anatomical change due to local irritation resulting in structural unfitness and emphasized and exaggerated in that unfitness in the presence of normal stimulation to the apparatus to function. None of this is evidence of any special irritability of the pilosebaceous apparatus for these substances, nor of unusual affinity of these substances for this apparatus.

It must be conceded that no known external irritant or circulating foreign substance is responsible for acne vulgaris and that the condition so uniformly appears synchronously with the maturity of sex function that it seems reasonable to suppose that the organism elaborates at about that time a substance or substances that operate, on the one hand to influence the sex organs and on the other the pilosebaceous apparatus (a secondary sex factor). And with the throwing into the circulation of this pilosebaceous "stimulant" acne appears. To me this is reasonable physiology and in keeping with clinical facts. Dr. Sulzberger and his collaborators accept this statement of the situation but in terms of their hypothesis see in this elaborated stimulant a basis for the acne to them this substance or substances probably elaborated by the glands of internal secretion have a perverted influence upon the pilosebaceous apparatus to the extent that these substances are irritants and may produce acne after the fashion of iodides, tuberculosis toxins, and grease. We know of no substantiating evidence for this and cannot accept it. To us the explanation is as simple as when grease locally applied is the cause of acne,

namely, that the anatomically unfit follicular units (reflect on the comedone and its relationship to acne vulgaris), when put under the impetus to function, show their unfitness by a follicular papular reaction.

Our essayists undertook to test clinically their hypothesis by the use of the patch test. Of slight moment is the fact that these tests were all substantially negative. I am willing to assume that they were all positive, that they all produced follicular papules, and under these circumstances they would prove nothing with respect to their hypothesis concerning the pathogenesis of acne vulgaris, to wit, that the body elaborated stimuli to pilosebaceous apparatus circulating as specific irritants to set in motion the chain of events leading to the follicular papule. May I say in closing that the difference in the points of view of our essayists and ourselves may appear in the following analogy: A moving automobile is losing oil from its crank case and finally the motor breaks down. Our essayists say that the damage was done by the presence of gasoline in the gas tank, because if there were no gas in the tank the car could not move, and if the car were not moving the motor would not have broken. We say, in our simple way, perhaps, that the trouble resulted from the loss of the oil and that using the gasoline to drive the car was one way to show that the car was unfit for use.

DR. MARION B. SULZBERGER: I believe that Dr. Sharlit and I are in practically complete agreement, except perhaps on one point. I, of course, grant that the acne lesions appear in follicles which are in some way aberrant or altered at the moment at which the stimulant begins to act. However, it is a question in my mind as to whether this aberration is as simple as Dr. Sharlit imagines, and consists simply in

a nevroid abnormality in the excretory passage. There are many facts which speak against this assumption (for it must be still regarded as a pure assumption, there being absolutely no proof of the preëxistence of such an anatomic abnormality in the follicles of acne patients; clinical and histologic evidence both speak against this).

Furthermore, should there be a preëxisting and predisposing anatomic or functional abnormality, the stimulus which produces the acne eruption in these follicles would still have to be considered part of the pathogenetic process; just as for instance, phenolphthalein ingestion and distribution must be considered as part of the pathogenetic mechanism in the production of a phenolphthalein dermatosis, which subsequently appears in apparently normal, but certainly in some way predisposed area of the skin. To use Dr. Sharlit's parable of the automobile, let us assume that an automobile is defective in some way, just as the follicle may be defective in some way. We have, in the case of the follicle, no way of discovering its defect and no way of repairing it. This may be the case in a defective automobile as well. The automobile is capable of functioning provided it is not overloaded or driven too quickly, just as the follicle is capable of functioning and does not become the seat of the pathologic process unless it and the sebaceous gland become stimulated beyond the point of tolerance (speed and overload).

The best way to keep the automobile in the story from breaking down is to prevent its being overloaded or driven at an excessive speed. Similarly we are trying to ascertain what hormones or substances bring about the overloading of the follicle and the excessive sebaceous secretion and thus perhaps learn to prevent or counteract this factor.

## PRACTICE IN A PENITENTIARY

The problem of the prison doctor in Sing Sing, it appears, is to keep the well from pushing their way into the hospital, for anywhere from 100 to 150 show up each morning for sick call, out of an average of 2,600 convicts, lured by the prospect of better food, more comfort, and surcease from work. Dr. Charles C. Sweet tells about it in *Medical Economics*. As a matter of fact, the doctor assures us, prison life is good for the convict and thanks not only to the medical care that they receive but to the enforced regularity of their lives as regards exercise, eating, and hours of sleep, most prisoners improve remarkably in health within two or three months after coming to Sing Sing.

A picturesque figure is the hospital artist. This man, a negro and a lifer, says Dr. Sweet, is present at every operation. At a point where the pathological feature of the case is most clearly revealed, the operation is halted for a few seconds while he makes a pencil sketch and gets an accurate mental image of that field. Afterwards, in his office the final touches are

put to the picture, and the completed pen drawing is filed with the patient's chart. These picture records, in color, are not only interesting but extremely valuable as part of the surgical records.

Whenever it is necessary to do a blood transfusion, donors are always chosen from among the prison population. The evening before the transfusion is to be made, an announcement goes out on the institution's radio that blood donors are going to be needed. The men get this message in their cells, and the next morning invariably a great number of volunteers show up at the hospital to have their blood typed. As many as three hundred men have appeared at one time in response to such a request, despite the fact that it is usually necessary to test four or five before finding a suitable donor. The one selected stays in the hospital that day and that night, and gets as his only special reward a chicken dinner, which he probably shares with somebody in the ward, perhaps the man to whom he has just given part of his own blood.



## FURTHER COMMENTS ON HEAD INJURY — THE POSTCONCUSSION SYNDROME

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The controversy still rages about the nature and significance of subjective syndromes following head injuries. The increasing social significance of the problem has again brought this vital subject to the foreground. A cool appraisal of the clinical material is often made impossible by the fact that investigators are too often polemical in their tone and point of view and seem to be defending or attacking some position or body of doctrine. An attempt must be made to evaluate the issues involved in an unprejudiced manner.

Among the varied syndromes following head trauma, there exists a group of cases which are considered by many entirely functional and psychogenic, but which should be unquestionably classed as organic, the sequel of intracranial injury.

It is evident that psychogenic reactions following head injury are frequent and that in many of these cases the desire for compensation plays an important role. In a later communication a more detailed study of these psychogenic symptom complexes will be presented.<sup>30</sup> Dr. Strauss and the author have been erroneously quoted as saying that all the so-called post-traumatic neuroses have an organic basis. In a previous study it was stated that there exists a group of cases following head injury which are usually included in the traumatic neuroses, but which are undoubtedly organic in nature. Whether this group is large or small is difficult to state at the present and statistical data must await further clinical studies.

The author's attention is confined entirely to the subject of head injury. The sequelae of head blows are different from the consequences of trauma to other parts of the body. One lamentable source of confusion is this persistent failure to distinguish between these types of injury.

In the usual trauma to the head in civil practice there is an absence of initial terror and fright which so many recent writers have stressed as a probable explanation of the clinical changes following injury.

The term traumatic neurosis includes a great many conditions of varied etiology. Coined by Oppenheim,<sup>3</sup> it has outgrown

its usefulness as a convenient rubric for the classification of all kinds of sequelae not evidently organic. Friedman,<sup>4</sup> in 1892, Horn,<sup>5</sup> in 1916, Krisch,<sup>6</sup> in 1927, Luigi,<sup>7</sup> in 1933, and many others have emphasized the necessity of a separate consideration of a group of cases organic in nature and usually considered among the so-called traumatic neuroses. These cases present clinically a subjective syndrome without gross focal signs. A useful term to designate this group of cases is the "postconcussion syndrome." It is really a form of traumatic encephalopathy, using this term to designate all organic intracranial changes following head injuries including reversible physiological perversions of function.

Concussion remains to this day an unclear term. This word has been used for about 600 years by almost all writers on the subject. The most widely accepted definition of this term was that of clinical changes resulting from a head blow, without evident damage to the brain (Boirel,<sup>8</sup> 1674). Up to 1839, so-called violent concussion included laceration of the brain. It was then that Dupuytren definitely distinguished between contusion and concussion of the brain. When Littre,<sup>9</sup> in 1705, formulated his famous conception of concussion, he lived at a time when the microscopic changes in the intracranial tissues following head injury were unknown (recently summarized by Courville and Rand<sup>10</sup>). Petit, early in the eighteenth century, who ascribed concussion to the vibrations transmitted to the brain, knew nothing of microscopic pathology. Nela-ton<sup>11</sup> in 1855, impressed by Bright's description of multiple petechial points of bleeding, considered concussion a diffuse contusion of the cerebral mass, that is the result of multiple minute injuries to brain tissue. The clinical changes following concussion also depend upon physiological alterations, such as disorders of the secretion of spinal fluid, changes in tonicity of intracranial blood vessels, alteration in meningeal permeability, etc. We must, therefore, change our attitude toward the term concussion and cease clinging to a conception formulated long before our present knowl-

edge of the anatomical and physiological changes following head injuries. We must give up the almost universal assumption that concussion implies no anatomical changes. We believe that some of the described changes persist in those patients who survive head injuries and that these account to a large extent for the clinical picture.

In spite of the probable difference in pathogenesis in the individual instance, these patients present a somewhat uniform clinical picture. The brain is known to react to various lesions and noxious stimuli in a very similar manner. They complain of headaches, dizziness, ready fatigability, intolerance to intoxicants, irritability, and difficulty in thinking. This symptom complex suggests an organic syndrome. It is not infrequently seen in early cerebral arteriosclerosis. On close clinical scrutiny the resemblance to a neurosis appears to be only superficial. Such similarity emphasizes the urgency of a careful clinical study of these cases. We feel that a more frequent utilization of what Strauss and the Author call the cooperative technic will facilitate such differentiation.

The headache in these cases is most often paroxysmal. It is usually described as a real ache or pain, rather than the "tightness and pressure sensation" reported by psychoneurotics. These pains in the head most often follow mental and physical effort. One must be very cautious in the interpretation of what many patients call dizziness. True vertigo is quite rare and a variety of abnormal experiences are reported to the physicians as dizziness.

The reiterated objection that each one of these complaints is encountered in the neuroses is no proof of the state of affairs in the particular case. Today one knows how closely psychogenic patterns of response may resemble organic disease pictures. The final opinion must depend on the impression that the whole clinical constellation makes on the experienced examiner.

It has been suggested that these cases be subjected to a series of studies which include a variety of technics available for the study of the intracranial processes. The presence of a few psychogenic features in a particular case does not rule out the existence of significant organic changes upon which the psychological reaction is

superimposed. This investigation should include:

1. Thorough neurologic examination.
2. Psychological and psychiatric study.
3. Otoneurologic investigation.
4. Spinal fluid studies including encephalography.
5. Other studies, especially of vegetative functions.

Bruns states that every case with the subjective syndrome due to organic intracranial injury will show focal signs if studied carefully enough. While our experience does not entirely coincide with that of Bruns,<sup>12</sup> it does seem that very careful neurologic examinations result in fewer and fewer negative cases as far as focal changes are concerned. Further refinements in our localizing technic will probably show us that our negative findings are often the results of cursory and inadequate examinations. It has been pointed out many times that the small traumatic lesions of brain tissue often give rise to what has been called "micro-symptoms"—slight changes that need very careful clinical survey for detection. Fragments of striopallidal disease are often missed. Bruns has pointed out the frequency in these cases and the significance of frontal ataxia, reflex changes, visual field disturbances, and mild cortical sensory defects.

The finding of a focal sign is merely confirmatory of the existence of organic disease. The injured adult who comes to us for examination has already been exposed to a variety of environmental stresses and disease processes with resulting modification of the soma. A mild hyperreflexia or a pupillary irregularity may be the result of disease antedating the trauma. The positive findings must be evaluated in the whole clinical setting, including the past history of the patient. All these methods must be applied cautiously and wisely. The proper evaluation of the results of all these examinations will always depend on the clinical judgment and acumen of the attending neuropsychiatrist.

We are all groping for more reliable methods of objectifying the intracranial damage resulting from head injury. During the long history of this subject many methods were suggested though soon rejected by clinicians. The methods which we have discussed are worthy of further trial. Some of the technics have already

been found unreliable. We have not been able to confirm the value of the KI method used to study the resorption of the cerebrospinal fluid. We are still uncertain about the value of the Muck test. The Baillart method of measuring the pressure in the retinal artery has given us very interesting and promising results. It is worthy of further trial.

Encephalography has proved to be an invaluable aid in our investigations. It sometimes reveals striking evidence of the existence of intracranial damage. The existence of sources of error in a clinical procedure does not entirely invalidate its application. These pitfalls and limitations should be recorded and impressed upon those who are using the method. It is obvious that preexisting defects of the ventricles should be ruled out by looking for all other possible causes for such distortions in the past history of the patient. Slight dilatations of the ventricles may be the upper limits of the normal range of variation in size of the ventricle.

The objections of Kehrer, Reichardt, Hall and Mackay and others that we do not know enough about the normal controls in encephalography are being answered by the remarkable accumulation of encephalographic experiences in the last decade. Bielschowsky studied 100 controls. The author would like to caution the interpretation of encephalograms in older patients who may have extensive arteriosclerosis of the smaller cerebral vessels and who may show marked cerebral atrophy and a hydrocephalus ex vacuo. One must accept the value of definite hydrocephalus internus with rounded out ventricular horns, of the unilaterally enlarged ventricle with an occasional pulling of the ventricle toward the side of the lesion, unusually extensive accumulations of air over the cortex. A normal encephalogram does not rule out the existence of an organic post traumatic affection. We have made the diagnosis of organic disease with a normal encephalogram. The aerogram is only one of the methods at our disposal. The critics of this type of approach to the subject of head injury have overemphasized the significance we attach to the encephalogram.

Further studies have confirmed the fact that occasionally the postconcussion syndrome is due to increased spinal pressure. Two such cases were seen in the last year at the Morrisania Hospital. One was a

child of 8 with persistent headache and dizziness, following a head injury of moderate severity a few weeks before admission. There were no other signs of intracranial damage. The symptoms were completely relieved by a spinal tap. The other case was a man of 32 who sustained a severe head injury five years before. Except for some suppression of associated movements on the right when walking and a hyperactive left knee jerk with slight posturing of his head toward the right there were no focal signs. A lumbar puncture showed increased pressure with striking relief after the removal of a small amount of spinal fluid. The Ayala indices in these cases were high, showing that there probably existed an increased accumulation of cerebrospinal fluid. This condition may progress to the point where bilateral papilledema may appear and more drastic measures for relief of pressure may be necessary. In our experience even such cases responded to simple lumbar drainage. In a previous communication Strauss and the author<sup>1</sup> have shown that occasionally a very low spinal pressure is found. In these cases air insufflation by the lumbar route has proved of great therapeutic value, probably due to the breaking up of meningeal adhesions by this procedure.

There can hardly be any doubt about the fact that the increased spinal pressure in these cases accounts for the symptoms. The relief by puncture is definite. Some of the patients have returned requesting relief by lumbar puncture. The contention of Kehrer<sup>15</sup> that increased spinal pressure may be psychogenic can hardly be viewed seriously. This writer offers no clinical data to substantiate this bold statement.

Not infrequently the most incapacitating symptom is an inability to think, to do any relatively complicated intellectual work. In certain types of workers, such as physicians, teachers, etc., such defects may be even more significant than a mild weakness of a limb. During the war a number of investigators, like Pfeiffer,<sup>16</sup> attempted to evaluate and measure the extent of such impairment of the intellect. It must be noted that decreased capacity for intellectual performance may be the result of undue affective lability or a defect in volition. The further investigation of the nature of these alterations in conscious psychologic processes merits the attention of clinicians.

The results of Oberholzer<sup>20</sup> with the Rorschach test, of Storrings<sup>21</sup> with ergogra-

phic curves, and of De Santis<sup>22</sup> with memory tests, are instructive and merit the closer attention of neuropsychiatrists. The clinical applicability of these procedures is as yet doubtful. Definite and practical suggestions are as yet not available. Mrs. Conkey is studying this problem at the present time at the Morrisania Hospital.

It must be borne in mind that the defect is often limited to the most complex intellectual processes so that simple clinical tests may fail to reveal any abnormality. Most psychological tests do not duplicate the exigencies of life. In spite of excellent performance on a battery of mental tests, school progress and efficiency at work may remain persistently bad. The conditions of the psychological laboratory are necessarily artificial. There is lacking the natural clash with hostile environmental forces. Recently the author examined a girl of 16 who did very poorly in her high school work following a head injury in an automobile accident. Thorough psychological examination showed nothing abnormal. She admitted that her attitude was different in the classroom. She found it impossible to recite and during the stress of an examination could not recall simple facts of importance at the time. No such difficulties had been experienced up to the time of the accident. In this case, while the elementary psychological processes seemed intact, a defect in psychic integration existed, perhaps in the proper mobilization and synthesis of psychic energy. There still exists considerable difficulty in measuring such a defect, though the literature in experimental psychology contains some very valuable suggestions.

An intensive clinical study is urged in all unclear cases. It is unnecessary to spend the time and energy for cases with obvious defects and focal signs. Special investigation should be undertaken of the most important complaints. In cases with visual disturbances everything should be done to study the cause of the complaints. The presence of psychogenic complications should not make it unnecessary to study the case carefully. These methods are attempts at arriving at the truth. Some are more reliable than others. They should be used with the same precautions as other instruments of investigation. Formulae, quotients, and coefficients of correlation will never replace the opinion of the experienced clinician.

Much of the literature on the sequelae of trauma is the result of the experience of men who see many industrial accidents. It is evident that in that type of material the desire for adequate compensation looms large in the clinical picture. Almost all the cases are complicated by the possibility of secondary gain from illness. The postconcussion syndrome, therefore, is not as often seen as clearly as in the practices of those physicians who see cases where there exists no compensation or insurance problem.

Many objections have been voiced against the acceptance of the postconcussion syndrome as a clinical entity. There are a number of reasons for this widespread reluctance to admit the organic nature of the postconcussion syndrome. These reasons are:

(1) The assumption that an organic syndrome is more serious and therefore more compensable than the psychogenic reactions. This generalization is not true. Some of the most incapacitating and devastating reactions to head trauma are seen in purely functional reactions. Recently the author saw a man practically confined to his bed and helpless for six years, with an undoubted, severe functional response to the trauma situation. The author has never seen a case so disabled by an organic lesion. Frequently the very severe organic lesions end in death. The survivors usually show a progressive tendency to recovery and to restoration of the intracranial equilibrium. Our observations confirm the impression that there is a progressive tendency to recovery if secondary psychological elaborations do not set in. The possibility of restoration of function, even with the removal of extensive areas of the brain, has been demonstrated many times. Cooper,<sup>23</sup> almost a century ago, showed that extensive destruction of the brain can take place without significant functional impairment.

(2) The tendency in certain parts of the world to deny compensation for the functional cases. This has been especially true in Germany. Such an attitude has called forth a rather vigorous attack on the organic nature of the postconcussion syndrome. The acceptance of the psychogenic nature of this symptom complex by legal authorities will exclude a very large number of cases from receiving any compensation. The financial implications of such a decision and this point of view are obvious. The experts for the insurance companies

have therefore redoubled their efforts to disprove the organicity of the syndrome. They have once again emphasized the pathogenetic significance of the desire for compensation. We have insisted that in many cases of head injuries the psychological elaborations are merely secondary complications and at times more important and incapacitating than the original organic injury.

(3) That there are no objective criteria and that simulation will therefore be encouraged. One of the first reactions of a prominent neuropsychiatrist to the presentation of our point of view was the fact that it would encourage the number of fraudulent claims. Very careful clinical study will detect the simulator. In almost all the cases we studied we found objective evidence of intracranial injury. In those cases who do not present such objective criteria the differentiation is more difficult but can usually be made on clinical grounds. One might as well argue that there is no such thing as early paranoid dementia praecox because it is easily simulated and there are no objective criteria for diagnosis. It would exceed the limits of this paper to discuss the interesting problem of the detection of the simulator.

In this attitude of some experts one traces the influence of legal procedure on medical practice. The courtroom demand for objective evidence cannot always be met by physicians. Much of our medical opinion is based on reports of subjective experiences by patients. The question whether the patient is honest or simulating usually depends on the total impression that the behavior of the patient makes on the physician.

(4) That there is no definite organic basis for the disease. Kehrer maintains that a disease entity cannot be created without a definite morphologic substratum. Such a time worn conception of the nature of disease cannot be upheld at a time when migraine, epilepsy, Raynaud's disease, myasthenia gravis, and narcolepsy are fairly well established. While no constant anatomical changes have been established, it is probable that the petechial hemorrhages, changes in the meninges, alterations in glial activity and other described brain changes play an important part in accounting for the clinical changes. There exists in addition a great deal of evidence that physiological changes within the

cranium are responsible for the morbid manifestations.

(5) That premorbid instability and other constitutional defects are frequent in those who most often show this subjective symptom complex. Thus fact is said to prove that the symptoms are only psychologic responses to the trauma in predisposed individuals. Nervous and mental diseases were not more frequent in our patients than in others suffering from varied medical and surgical complaints. The existence of constitutional defects and predispositions has no bearing on the question of the organicity of a given disease process. The morbid phenotype is always the resultant of the interaction of genetic and environmental factors. It is well known that the reaction to physical stresses, even to bacterial invasion differs. A significant constitutional factor has been demonstrated in rheumatic fever (Draper), pneumonia (Pearl), and chronic encephalitis (Löffler). Constitutional factors may also determine the particular form which a disease process will take. Such modifying influences on the nature of morbid reactions have been described by Fleck in chronic encephalitis and Schneider in general paresis. It is known that an unstable individual, a psychopath will more readily become delirious in reaction to an infection (Birnbbaum). It is therefore not surprising if the unstable and constitutionally handicapped respond more seriously to head injury and more readily develop psychogenic complications.

The whole problem needs a great deal more study. We must all endeavor to divest ourselves of prejudices for and against the injured. The legal considerations should not confuse the medical expert. Wishful thinking should be avoided and something should be done to resolve the scotomata of many of our medical colleagues when they approach a traumatic problem. The organic factor in head injury merits further attention.

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#### 1814 GRAND CONCOURSE DISCUSSION

DR. EUGENE N. BOUDREAU: Relating to the anatomic and physiological approach to the discussion, I am surprised that Dr. Savitsky does not refer to the complete piece of work published by Adolf Meyer in 1903. That undoubtedly represents the full appreciation of the subject at that time. What fundamental contributions have been added since that day? There have been contributions on the spinal fluid which, however, have not changed materially our con-

cepts or given us better channels of therapy. Of course, Temple Fay and others have stirred us to pay greater attention to this angle of approach. The establishment of new facts relative to the vessels of the brain—I am referring to the vasomotor control and the demonstration of collateral circulation—have very material relevancy. These new facts certainly tend to change our viewpoints about the physiology of brain trauma. But as yet have we arrived at the point where our various attacks by neurological examination, spinal fluid pressure readings, encephalography, etc., give us definite and conclusive results when interpreted? There still is a wide realm of uncertainty. This is so because of the intricacy of the mechanisms involved. Dr. Savitsky indicates that his experience has been conclusive in some cases.

I think, as Meyer showed by his reports, that as a result of the unevenness of the cranial floor, the sharp margins of the tentorium and the varying density of the brain substance, even slight external violence is likely to cause some physical injury to the brain tissue. This he found frequently at the various poles and about the ventricles. As yet, it seems to me impossible to demonstrate the absence of such injury in any case even with the careful approach described by Dr. Savitsky.

I have a feeling, therefore, that aside from the few cases of encephalography where evidence is definite, the other procedures cannot be depended upon.

I agree with Dr. Savitsky that long clinical experience is still most necessary in differentiating the organic from the nonorganic reactions.

So far as the latter are concerned it is my experience that the attitude and care given the injured person in the first instance is most important. The shock injury and the later necessity of the individual to defend his honesty, honor, and self-respect precipitates a psychic reaction that requires long effort to change or correct.

The point made that the injury may release psychic phenomena is, of course, well taken. But a brief discussion cannot do adequate justice to this splendid effort of Drs. Straus and Savitsky. However, I am glad of the opportunity to express my appreciation of their industry in clarifying the subject further by these exhaustive researches.

#### ACCIDENTAL DEATH

He had a prophylactic bent  
And led a sterile life,  
Had hygienic children and  
A sanitary wife,  
Lived in a fumigated house  
And wore aseptic suits,  
Ate germicidal food and smoked  
Denicotined cheroots.

His milk was always pasteurized,  
He drank denatured water,  
He ne'er forgot to swat the flies,  
Mosquitos he would slaughter.  
He screened his doors and windows,

His office disinfected:  
Against microbes of every kind  
He felt himself protected.

He exercised, he slept by rule  
And timed his every breath,  
His health was excellent and he  
Defied disease and death.  
His plan was admirable, no doubt,  
Alas, the measly luck!  
He went out and got run over  
By a ten-ton power truck.

VICTOR LEVINE,  
in the *Nebraska State Medical Journal*.

# SERUM SICKNESS A CLINICAL AND EXPERIMENTAL STUDY\*

## Preliminary Report

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Our remarks will be confined largely to a phase of the problem of serum sickness which has to do with certain nonspecific inhibitory factors. Our work began with observations on the effect of fasting and ketogenic diets in asthma. Then there was a study of serum sickness and later, observations on the effect of fasting on anaphylactic shock in guinea pigs. All of this work was related—we were interested in a phase of the problem of nonspecific inhibition of certain allergic phenomena. The following is the story of our work briefly summarized.

In 1930 one of us encountered a difficult subject to deal with—a child with asthma. Many of the things that provoked attacks were removed from his environment and from his diet, but it was impossible to remove all of them and he reacted unfavorably to adrenalin and ephedrine. A report of Peshkin and Fineman had very recently appeared in the *American Journal of Diseases of Children*, relating their experience with ketogenic diets in asthma. The case was studied from that standpoint. The results were encouraging and suggested further study.

The nonspecific effect of a mild to moderate degree of ketosis was studied in other subjects. Some of them were benefited. In one instance it was possible to completely inhibit attacks in the presence of the same given cause. In this particular subject it is still possible to do this with case. In other instances we appear to have altered attacks of asthma by means of fasting, low carbohydrate submaintenance diets or fat rich diets, sometimes supplemented with such drugs as hydrochloric acid by mouth or ammonium chloride in large doses. At times the treatment was reported as more disagreeable than the asthma but we did not mind that, particularly if our observations told us something about nonspecific inhibitory effects.

Because of the many factors involved and because of the scarcity of asthma in the hospital wards we decided to go elsewhere for material. At the time, serum sickness was being frequently observed at

the Syracuse City Hospital for Communicable Disease and in the case of that particular condition there are fewer complicating factors than in asthma. The majority of subjects receiving therapeutic horse serum were sufferers from scarlet fever. Most of these subjects were not frightfully ill. The incidence of serum sickness was high. Through the courtesy of Dr. Silverman it was possible to observe all persons receiving therapeutic horse serum and to follow each for approximately one month under controlled conditions. This was an almost ideal set up. Our methods and the results of our observations are briefly as follows.

Control subjects were given an anti-ketogenic diet, care being taken to give them enough carbohydrate to prevent the appearance of acetone in the urine. Treated subjects, immediately after receiving serum, were placed on a submaintenance low carbohydrate diet in order to induce a ketosis if one were not already present. A mild to moderate degree of ketosis was maintained for a period of two weeks. Urine specimens were examined three times a day shortly before mealtime. During the first winter we gave hydrochloric acid to treated subjects with each meal. Subsequently HCl was discontinued and the results of ketogenic diets alone observed. The results were not quite as good when we omitted HCl from the diet but we are not at all certain of the significance of this finding.

Our correlated studies are based on observations made on 55 especially treated subjects and on 97 control subjects. Signs of serum sickness were observed in 78, or 80 per cent of the control subjects and in 26 or 47 per cent, of the persons maintained in a state of ketosis (hereafter called the treated group). Generalized urticaria occurred in 73, or 75 per cent, of control subjects and in 21, or 38 per cent, of the treated subjects. Joint pain was recorded in 40, or 41 per cent, of the controls and in 15, or 27 per cent, of the treated subjects. (In this connection an urticarial reaction beyond the site of the area where the serum had been injected

\* Aided by a grant from the Hendricks Fund.

was considered as a generalized reaction, even though very few hives were seen in some instances. Also, we may have been fooled in certain instances of joint pain, but in general we think that our observations were quite accurate.)

These observations suggest that the incidence of serum sickness was reduced as a result of the special treatment used. Other data suggest that, in addition to a reduction in incidence, the duration and the degree of discomfort were also altered. For example, when the average duration of generalized urticaria was calculated for individuals actually suffering from that condition, it was found that the average for the treated group was 35.2 hours and for the control group, 57.1 hours, the difference being 21.9 hours. (The average duration of joint pain showed no appreciable difference in the two groups.) The data just cited do not take into consideration the reduced incidence of serum sickness in the treated group. Calculated with that in mind, more striking difference can be demonstrated in both cases.

The degree of discomfort due to serum sickness was estimated in all subjects suffering from that condition. The results, of necessity, are only approximate. However, the same criteria were used for both control and treated subjects. Tabulated data suggest that there was distinctly less discomfort among the treated subjects.

But in spite of the fact that the data thus far presented appeared to show that a mild to moderate degree of ketosis tends to inhibit the clinical evidence of serum sickness, it is possible that the size of the series is too small to warrant any definite conclusion. In view of this fact it was felt that if it could be shown that the reduced incidence appeared in one group of the treated subjects and not in another, we might have more convincing evidence to present. Thus it came about that, in correlating results in different ways, we could divide our treated subjects into two groups, one of which showed a marked reduction in the incidence of serum sickness and the other did not. This was not true of control subjects. For example, treated subjects who had exhibited positive skin sensitivity tests to horse serum (before the injection of therapeutic horse serum) suffered from serum sickness just as frequently as did the corresponding control group. On the other hand, treated subjects who had exhibited negative skin

sensitivity tests to horse serum exhibited a markedly reduced incidence of serum sickness. Table I illustrates this better than it can be described.

TABLE I

Treated series	Number of subjects.....	Skin sensitivity tests	
		Positive	Negative
	Incidence of serum sickness	16 14 (88%)	31 8 (26%)
Control series	Number of subjects.....		
		18 17 (94%)	38 27 (71%)
	Incidence of serum sickness		

The fact that serum sickness was reduced in treated persons with negative skin tests and not in treated persons with positive skin tests, seems to be one of the most interesting bits of data that we have collected. It tends to suggest that the threshold mechanism was affected in one group and not in the other, perhaps because our nonspecific method was not sufficiently potent to affect the more sensitive individuals.

STUDIES ON THE EFFECT OF FASTING ON ANAPHYLACTIC SHOCK IN GUINEA-PIGS.—During the course of our observations at the City Hospital it became apparent that animal studies might shed some additional light on the subject. As a result of discussions with Dr. O. D. Chapman, Dr. H. G. Weiskotten, Dr. Wm. Groat, and others, preliminary tests were made. Dr. Chapman has been actively interested in this work and has made it possible for us to use his laboratory and animal room.

Our first experiments were designed to answer the question: *What is the effect of fasting on anaphylactic shock in guinea-pigs?* Twenty young pigs were used in each experiment—ten fasted and ten controls. The ten fasted pigs were deprived of food and water for three days before the shocking dose of serum was given. The ten control pigs were fed their usual ration up until the end. The first experiment was terminated at eighteen days (after sensitization), at which time a shocking dose of serum was given and the clinical effects observed. Both in this experiment and the next one which was terminated on the twentieth day, we were unable to detect any difference between the manner in which control and fasted pigs reacted to the second or intoxicating dose of serum.

These two experiments seemed at first to tell us that fasting in the manner described did not influence the clinical evi-



dence of anaphylaxis. We were at first discouraged and the animal work was temporarily abandoned.

Next came our observation that a mild to moderate degree of ketosis appeared to influence the course of serum sickness in "less sensitive" subjects (on the basis of skin sensitivity tests) and did not appear to do so in the "more sensitive" subjects with positive skin sensitivity tests (see Table I).

Since it has long been known that guinea-pigs gradually develop a sensitivity after having been given a preliminary or sensitizing dose of horse serum, it was decided that we observe the effect of fasting before the peak of sensitivity had been reached. Our next experiments were designed to answer the question—*What is the effect of fasting on anaphylactic shock during the period of developing sensitivity?*

With the particular technic and dosages of serum adopted we found that the peak of the sensitivity curve was reached at about sixteen days after the sensitizing dose of serum had been given. Experiments which were conducted as were our first two, but which were terminated during the period of developing sensitivity gave us the following data:

Among the control animals little evidence of sensitivity (as manifested by signs of anaphylaxis appearing after the intoxicating dose), was observed at eight days, slightly more at ten days, more at twelve days, and so on up to and including sixteen days.

Fasting (no food and no water) for a three-day period before the shocking dose of serum was given constituted the special treatment of the various treated groups. Among the fasted groups of pigs little evidence of sensitivity was noted at eight days, little at ten days (evidenced as stated before, by signs of anaphylaxis appearing after the intoxicating dose of serum had been given), little at twelve days, slightly more at fourteen days and slightly more at sixteen days. The curve of developing sensitivity appears to rise at different rates for fasted and nonfasted pigs. Fasting appeared to exert a protective effect in these experiments, up to and including the

sixteenth day. Our most striking results came in one of the sixteen-day experiments in which six of the control pigs died and another nearly died but recovered. None of the fasted pigs died and only one of the ten suffered from a severe reaction.

Since eight experiments, in which a total of 160 pigs were used, exhibited evidence of the inhibitory effect of fasting during the period of developing sensitivity, we felt justified in proceeding to the next question: *What is the effect of fasting on anaphylactic shock after the peak of sensitivity has been reached?*

Using the same technic and the same dosages of serum that we had used in previous experiments, we proceeded. This time experiments were terminated at eighteen and at twenty days after sensitization. Control experiments appeared to show that the peak of sensitivity was reached at sixteen days and that there was a very slight falling off on the eighteenth and twentieth days. Whether or not this is an absolutely true statement cannot be said, but it does appear to be true that (with the technic described) eighteen and twenty days represent points very close to the peak of the sensitivity curve. Six experiments were conducted. Twenty pigs were used in each. In all six of these experiments we were unable to detect any difference in the manner in which control and fasted pigs reacted to the second or intoxicating dose of serum. In these experiments fasting failed to exert an inhibitory effect on anaphylactic shock.

The fact that fasting appeared to exert an inhibitory effect during the period of developing sensitivity and failed to do so when the peak was reached or slightly passed, was of particular interest to us in view of our findings in serum sickness. In serum sickness we observed different effects in the "more" and the "less sensitive" subjects, and in our guinea-pigs we observed different effects during the period of developing sensitivity and afterward.

In presenting this work we wish merely to report the results of our studies. The implications will be left to the reader to cogitate.

## PHYSICAL THERAPY IN GENERAL PRACTICE

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This topic is a large one since to the general practitioner comes almost every condition and his work includes parts at least of most of the specialties. The extent to which the general practitioner uses physical therapy in the varied array of diseases, syndromes, and injuries, depends largely upon his familiarity with physical therapy and the extent of his equipment. His idea of the value of physical therapy varies directly with the amount of experience he has had with it or with his opportunity to observe the results obtained by others.

## EQUIPMENT

The following equipment has proved to be very valuable in general practice, but not all of it is essential. (1) A heavy duty, high voltage, high frequency machine delivering the usual currents. (2) A portable high frequency machine for light work in the office or treatment of bed-ridden patients. (3) A cutting current machine, separate rather than incorporated in the high frequency apparatus, for convenience as well as portability. (4) A generator of galvanic current. (5) An ultra-violet generator, combining air- and water-cooled burners. (6) A whirl-pool bath. (7) Heat lamps, both infra-red and luminous ray. (8) An x-ray machine for superficial therapy. (9) A portable sun lamp using the S-1 incandescent bulb.

The cutting current has been found most useful as a separate unit. Obviously, however, adequate training with this current as well as surgical experience are essential before it may be used with propriety and safety, if it is used at all.

The galvanic current is still found almost as useful as it was several years ago although diathermy, medical and surgical, has supplanted it in many conditions. Many things can be accomplished by no other modality. The author has had no experience with the static generator although its value is well proven.

Many types of ultra-violet generators are available. The water-cooled lamp is apt to be of as much value as the air-cooled.

"Heat lamps" are indispensable com-

ponents of equipment, the luminous ray for some conditions and the infra-red lamp for others, while for still other conditions they may be used interchangeably.

## CONDITIONS TREATED

Only those conditions frequently encountered in general practice in which physical therapy is preëminently valuable will be discussed. There are, of course, innumerable conditions in which physical therapy *may* be used to some advantage, but there are also many conditions which yield to nothing else so quickly and so well as to one or more physical therapeutic procedures.

**INFECTIONS AND INFLAMMATORY CONDITIONS.**—*Pneumonia* has headed the list, not just because of the dramatic effect produced upon it by diathermy but because it is the most serious of the acute conditions one treats with physical therapy. The relief of pleuritic pain is striking. Dyspnea has improved and cyanosis has markedly lessened in all cases treated. The author believes that the course of the disease has been shortened and an occasional death prevented by the beneficent effect of heat and resultant improved circulation through the consolidated lung tissue. It has been especially apparent that lobar pneumonia, treated from its onset by diathermy, ends by lysis, thus sparing the overtaxed heart the added shock of crisis. The treatments should be fairly long, unless the patient tires from it, and they should be given at least twice daily.

Unresolved pneumonia which occurred in a surprisingly large number of cases several years ago—some of which had been treated with diathermy and some without—yielded so nicely to diathermy that one cannot doubt its effect after using it. There seems reason to believe that routine radiographs following all pneumonias may reveal some otherwise unsuspected cases of failure of resolution which can easily be cured. If undiagnosed, some of these cases may result in recurrent pneumonias—a reinfection of the old focus—perhaps a year or more later.<sup>1</sup>

Diathermy is also of value in bronchopneumonia and acute bronchitis. Chronic

bronchitis and bronchiectasis receive at least symptomatic improvement.

There seems no more common condition properly treated by physical therapy than *acute and chronic frontal and maxillary sinusitis*. The vast majority of sinus infections not only are relieved by radiant heat, but they get well under treatment. In more than 10 years the author has not referred a single patient with acute or chronic sinusitis for washing of the antra, suction, turbinate or septum resection, nor radical operation, because of the good results from luminous heat, ultra-violet ray locally, and occasionally with the addition of diathermy.

Much can be accomplished in the treatment of *chronic arthritis*, but only in a limited proportion of cases. Kovács<sup>2</sup> states that the most important forms of physical therapy in chronic arthritis are heat, general and local, from radiant or high frequency sources or through the medium of water, heliotherapy—natural and artificial—the galvanic and static currents, massage and exercise. The author has had some very gratifying results from diathermy as the only physical method of treatment, especially in the single joint involvement or in the bilateral knee joint, arthritis of the middle-aged. It is, of course, obvious that physical therapy alone does not comprise good clinical management of the arthritic.

*Neuritis* occurring with arthritis or alone yields to the same measures in a much higher percentage of cases, especially if the basic condition, as focal infection, is removed. Diathermy has been the most useful agent and, with persistence and proper application and long treatments, seldom fails to cure. The neuritis accompanying *subdeltoid bursitis* has been the commonest as well as the most crippling and painful type treated. Heat cures the neuritis by causing absorption of the calcareous deposit in the bursa responsible for it. Radiographs "before and after" tell the same story of relief that the patient so happily reports.

*Herpes zoster* either in its neuritic stage or after the appearance of the vesicles, is markedly influenced by ultra-violet light. If the diagnosis can be made before the eruption appears, it can actually be prevented, the pain relieved and the disease aborted. In the eruptive stage, pain is relieved and the vesicles dry quickly.

*Chronic cholecystitis* need not always be

a surgical condition. In several cases the author has observed a gallbladder function markedly impaired on x-ray examination, and on repeating this x-ray procedure after a course of treatment, found a normally functioning gallbladder in the symptom-free patient. The treatment must be long—at least forty-five minutes of full heat—and must be given almost daily until subjective improvement is experienced and then tapered off to three or two times weekly. Occasionally a second course of treatment is necessary within a few months or a year.

*Tuberculosis* of the larynx, in an advanced stage, complicating advanced pulmonary tuberculosis was so promptly cured in one patient, as to seem a life-saving measure. Tuberculosis of the bones, joints, and peri-articular tissues will often receive such excellent effect from heliotherapy, natural or artificial, that institutional care can be dispensed with. General and local treatment with ultra-violet light has resulted in several cures in such conditions. Intestinal tuberculosis, with the ray applied over the abdomen only, does very well under long and repeated courses of treatment.

*Tonsillitis*, whether caused by a streptococcus or the organism of Vincent's angina, usually resolves within a day or two after thoroughly raying of the tonsils with the Kromayer lamp, using a quartz rod. In the stage just preceding suppuration in developing peritonsillar abscess either the process is aborted or suppuration hastened by the use of a similar technic.

*Pharyngitis*, in the acute stage yields readily to exposure to ultra-violet rays. In chronic pharyngitis the author has had less success.

**TRAUMATIC CONDITIONS.**—*Low back pain*, whether due to sacro-iliac or lumbosacral strain, yields steadily though at times somewhat slowly to diathermy. With a small block tin electrode over the site of strain and a larger one over the abdomen, treatments lasting forty-five minutes are given daily until marked improvement occurs; thereafter they are given three times weekly. The patient almost always receives definite relief from the first treatment and usually not more than ten are required.

For the *sciatica* so commonly accompanying these strains, it is usually advisable to treat through the upper thigh with one electrode over the lumbosacral r

and the other either encircling the thigh or applied to its anterior surface above the knee. In some cases application through the pelvis, with the smaller electrode over the sacrum covering the nerve roots, is of more benefit.

In *sprained ankles*, knees and other commonly encountered sprains, diathermy logically helps nature's efforts to absorb exudate and to heal torn ligaments. By increasing the blood supply it shortens disability demonstrably. Usually heat from an infra-red or luminous heat lamp is used before the diathermy, or even radiant light alone is of real value.

The whirlpool bath has given much comfort and probably actually promotes healing through increased circulation, in *fractures of the extremities* where the cast or splint can be removed and the part immersed.

In the severe *contusions* that occur so often in industrial injuries, whether it be only a black eye or a deep-seated hematoma in the gluteal region, heat as from an infra-red generator, helps visibly in promoting absorption and relief of soreness, dysfunction and pain.

In the aftercare of fractures the effect of heat, converseive and convective, is well known. Many a well-reduced Colles or Potts fracture heals perfectly but with so much soft tissue damage resulting in fibrosis as to seriously impair the usefulness of the part. In these cases early active motion, radiant heat, and diathermy have revolutionized the former long immobilization and, trust-to-nature technic.

*Lacerations*, especially the ragged potentially infected ones, quite naturally heal more quickly and with fewer serious infections under the beneficent rays of the ultra-violet lamp and the luminous heat bulb.

It is probably in *burns*, of all degrees and of any extent, that the effect of the luminous ray is best demonstrated. The lamp is, for obvious reasons, kept at a comfortable distance from the burned area, vesicles are not broken, and the patient is not only made comfortable more quickly than by any other method the author has used, but healing is promoted with almost amazing rapidity.

The very fact that all large industrial enterprises maintain their own physical therapy departments, even under the eye of their efficiency experts, is proof of the economic value to the concern.

**SKIN CONDITIONS.**—*Impetigo* is one of the commonest skin diseases seen in general practice. Its response to the time-honored and usually efficient local applications is often disappointing. It responds uniformly well, however, to repeated doses of ultra-violet light, using either the air-cooled or the water-cooled lamp. A dosage just under the blistering one seems necessary.

Of the serious skin infections that yield to physical therapy *erysipelas*<sup>3</sup> is a shining example. It yields readily to ultra-violet light, from either type of lamp, obviously because of the direct bactericidal effect of the ray. It seems far preferable to use this simple, harmless method in the ambulant patient than to risk sensitization, serum sickness, or anaphylaxis from the use of antistreptococcus serum, except in those patients who are brought to us when already extremely ill.

Other superficial infections yield as readily to ultra-violet light as does erysipelas. Ultra-violet light will control any infection that it can reach. Its efficiency, however, is limited by its depth of penetration and the difficulty in raying the entire infected surface of the skin and mucous membrane.

*Pityriasis rosea*, will clear up within three or four days after ultra-violet light, if a second degree erythema over the whole affected skin area is obtained.

*Ringworm of the feet and body*, *furuncles*, *boils*, some forms of *eczema* and *acne vulgaris* all yield to ultra-violet light but, when available, the roentgen ray is preferable. Carbuncles and boils will either be aborted promptly, if seen early enough, or will suppurate and drain quickly if treated later.

A combination of luminous heat and the air-cooled quartz light often bring about early healing of *indolent* ulcers, that yield to nothing else.

*Alopecia areata* usually disappears after a fairly prolonged course of ultra-violet light. In premature baldness or thinning of the hair the author has found that ultra-violet light will at least temporarily arrest its steady march if given frequently and to an intense erythema.

**GYNECOLOGICAL AND GENITO-URINARY CONDITIONS.**—Gynecological cases come in great numbers to the general practitioner, especially to the rural one. In some of these patients we can, by physical therapy procedures, accomplish so much that it is to be deplored that there is not more wide-

spread knowledge concerning their treatment by these means.

*Endocervicitis* is probably the commonest condition in this group. It is of real importance to the patient from the standpoint of comfort and may actually be of major importance as a focus of infection or as a site for the development of cancer. The technic and method of treatment may be varied. The author has had some excellent results in the most hopeless looking crevices from the use of galvanic current, using a copper intracervical electrode or Tovey copper electrode. More recently he has employed the cherry diathermy electrode with quicker effect.

*Gonorrheal salpingitis* furnishes us with the best reason for emphasizing physical therapy in gynecological conditions. The acute stage can be greatly shortened by the use of a vaginal electrode of the pattern of the Chapman electrode and a wide block-tin belt electrode. The very small diathermy units will not deliver enough current to give adequate heat for this technic. Treatments must be prolonged and frequent at first. In nearly every case there is relief from pain following the first treatment. Tenderness, rigidity, and the pelvic mass usually have disappeared within a week or two. If pain is aggravated by the treatment, it should be discontinued, at least for the time being.

If the patient is seen in the chronic stage, much can be accomplished in promoting resolution of the pelvic mass, to the point of complete restoration in some cases, with consequent preservation of important structures. Operation, with the sacrifice of uterus, tubes, and ovaries, can thus often be avoided.

For the persistent gonorrheal infection of the cervix, if the usual medical treatment has failed to bring about a disappearance of gonococci and discharge, the author has found that two to four treatments with the intracervical electrode of Corbus<sup>4</sup> using a belt electrode, will bring about a cure in a large percentage of cases.

The same electrode may be used for the female urethra in gonorrheal urethritis, but a temperature not exceeding 113° F. is attained. Corbus and O'Connor state that in the average case the gonococcus cannot be found in the urethral strippings after one or two treatments.

Urethral caruncles are best destroyed by the Oudin current or by coagulation, as

are venereal warts or ordinary warts anywhere.

The pain of ureteral stricture may be relieved or stopped by diathermy applied through the abdomen at the level of the lesion. Along with mechanical dilatation through a cystoscope it is of great help, apparently not only relaxing spasm but possibly also helping to cause absorption of scar tissue.<sup>4</sup>

*Dysmenorrhea* is usually relieved by diathermy, either through the vaginal and belt electrode combination or by anteroposterior application through the pelvis. It is best given during the few days preceding the period. No ill effects other than slightly increased flow are noticed, even if it is given at the time of menstruation.

In the dysuria of elderly men which is aggravated by the boggy swelling of the hypertrophied prostate in a fair proportion of cases, diathermy administered by means of a rectal electrode and a dispersive block-tin abdominal electrode, will give such grateful relief that it is well worth trying. The hypertrophy itself is not affected, of course. Probably the effect described is as much from relaxation of sphincter spasm as from decongestion of the gland.

The same technic is used with splendid results in gonorrheal prostatitis.

**OTHER CONDITIONS—ELECTROSURGERY.**—The cure of rickets is certainly hastened by general irradiations with ultra-violet light although natural sunlight plus the proper vitamins accomplish as much if not as quickly.

Circulatory conditions including angina pectoris, endarteritis obliterans, phlebitis, Raynaud's disease are benefited, to some degree at least, by the careful use of small doses of diathermy.

Many surgical procedures have become office methods with physical therapy. The electrocoagulation of selected cases of hemorrhoids is a noteworthy example. Unless the area involved is too extensive or the tissues too swollen, hemorrhoids may be coagulated under local anesthesia and the patient allowed to go home. In extensive involvement the postoperative disability may approach that of orthodox surgery. Rectal and anal polyps are coagulated or desiccated. Obviously these procedures are not to be undertaken without special training.

A popular but very questionable office

procedure is electrocoagulation of tonsils. It is applicable in the aged, in bleeders, or in otherwise poor surgical risks, in the hands of the adept operator.

The treatment of hypertension by high frequency is losing its popularity. The author has seen no lasting good come from it.

The destruction of skin growths by surgical diathermy or their excision with high frequency cutting current is properly a part of general practice, provided training, equipment, and technic are good. Warts, moles, and some birthmarks are best treated by fulguration or coagulation. A thorough knowledge of the pathology of these conditions is also essential if their removal is to be undertaken. The thoughtless desiccation or coagulation of a blue or black mole may result tragically in metastatic melanotic carcinoma and death.

#### SUMMARY AND CONCLUSIONS

Physical therapy procedures are adapt-

able to the treatment of almost innumerable conditions in the general practice of medicine, to the great benefit of the patient. A few of the most useful have been mentioned. Proper training, good equipment, and a rigid standard of ethics are essential in this as well as in all branches of medicine. Slipshod methods, inadequate diagnosis, too hasty treatments given by poorly trained physicians and technicians are, of course, to be condemned. No one now denies that physical therapy is filling a great need in general as well as specialized practice.

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### AUSTRALIA'S HOSPITAL LOTTERY RACKET

Those interested in the efforts to start lotteries here to finance relief may like to have a glimpse of how they work in Australia. The hospitals there, as here, have been swamped by a flood of charity patients, and at the same time have been their revenues shrink alarmingly. The Australian correspondent of the *A.M.A. Journal* reports that in Queensland since 1920 the government has conducted a lottery known as the golden casket, which has provided a total sum of over \$3,000,000 for medical "charities." It is interesting to note that of the total receipts from the lottery 53 per cent is returned as prizes, 20 per cent is absorbed in expenses, and 27 per cent is available for distribution. A considerable proportion of the money collected came from New South Wales and, in fact, all over the world.

In 1932, the New South Wales government, in face of considerable opposition from the churches, commenced lottery operations on its own account. The opposition has had the effect of curtailing the activities of the director of the lottery. No advertising is permitted and the tickets are limited to five shillings and three-pence. The Queensland lottery suffered when New South Wales commenced operations, but taking advantage of the restrictions fettering the latter, Queensland instituted a second lottery with \$1 tickets. Five of these were held, and \$50,000 in each was subscribed in New South Wales.

This has given considerable anxiety to the

minister of health and others, and demands have been made that the restrictions should be removed from the New South Wales lottery so that it may be able to withstand the competition. Statements have been issued in the press strongly defending the lottery on the grounds of expediency and urging that, since it is much less likely to cause ruin to the public than betting and horse racing, these should first be eliminated.

Another aspect of the lottery that is causing concern is the number of lottery shops that have sprung up. These sell one-seventh share in a ticket for a shilling, thus making a profit of 1/9 on each ticket. It is estimated that at least \$100,000 a year is lost to the lottery in this way. An attempt was made to prevent this practice, but on an appeal to the courts it was upheld as being perfectly legal. It is stated to be the intention of the state parliament at its next sitting to declare the sale of share tickets in this way illegal and also to prohibit the gift of shares in lottery tickets as bonuses to those buying goods in shops, at present a common practice.

In Queensland the sale of share tickets of one shilling upward has assumed the proportions of an industry. About every tenth shop in the state is engaged in this business.

As a means of financing capital and maintenance funds of hospitals, the lottery system is a definite success; but there is a strong body of "silent" opinion that is ashamed of the method.

## THE CLINICAL SIGNIFICANCE OF THE PLASMA PROTEINS

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The proteins of the blood plasma have functions of great clinical importance. They consist of two general groups, the *albumins* and the *globulins*, each of which contain several individual members. The globulins include *fibrinogen* which has special functions in the clotting of blood, in the exudations of inflammation, and in connection with the sedimentation rate of red corpuscles.

The albumins and globulins have most important functions in connection with the distribution and movements of fluid in the body. The blood plasma enclosed in the vascular system is separated from the interstitial fluids of the body by semi-permeable membranes consisting of the endothelial cells of the capillary walls. Normally these membranes do not allow the plasma proteins to pass across them, though water and dissolved crystalloids pass readily. Years ago the physiologist Starling pointed out the importance of the proteins of the plasma in maintaining the normal fluid exchange across the capillary wall. The hydrostatic pressure of the blood in a capillary tends to drive water and salts outward. The osmotic pressure of the plasma proteins tends to hold water in the capillaries. This osmotic pressure is such that it is intermediate between the blood pressure at the arterial and the venous ends of the capillary, so that a mechanism is provided for both outward and inward diffusion of fluid. When normally balanced, the volume of the blood plasma and interstitial fluids is very accurately regulated.

The balance between the forces maintaining plasma volume and interstitial fluids may be upset in a variety of ways: (1) by an increase in mean hydrostatic pressure in the capillaries, (2) by an increase in the permeability of the capillaries, (3) by a deficiency in the amount of plasma proteins in circulation. For instance, as examples of increased hydrostatic pressures: venous stasis, whether produced by heart failure, tourniquet, thrombosis, or in any other way, increases the outward diffusion and may result in one form of edema. The capillary

membrane may be injured in a variety of ways so that it allows plasma proteins to leak through. This not only results in a depletion of plasma protein, but it may also greatly enrich the protein content of the interstitial fluid, which further displaces the fluid equilibrium.

The degree to which the permeability of capillaries is increased may be roughly estimated by determining the extent to which the individual plasma proteins pass through them because these proteins differ as to their molecular size. For instance, the albumins have a smaller molecular weight than the plasma globulins, so that the finding of appreciable amounts of globulin in the urine or edema fluid indicates a greater increase in capillary permeability than if only albumin is found. Fibrinogen has a fairly large molecular weight, so that its escape occurs only in cases of severe damage to the capillary wall (inflammation). Bence Jones proteins are smaller than the plasma albumins and may escape more readily.

The size of the plasma protein molecules bears a close relation to their relative abilities to hold water. The serum albumin molecule is smaller than the globulin and has a far greater capacity to hold water. A depletion of the albumins of the plasma will more readily induce edema than a corresponding depletion of the globulins. Lepore<sup>3</sup> has also made the interesting observation that the plasma volume is directly and closely correlated with the plasma albumin.

The third way in which the fluid balance within the body may be upset is through a deficiency in plasma protein, particularly of the albumin fraction. This often occurs as a consequence of excessive loss through abnormally permeable capillaries. It may also result from inanition. However it occurs, the result is a lowering of the colloid osmotic pressure of the blood plasma with an inevitable disturbance in water equilibrium.

Peters and Van Slyke<sup>4</sup> give as normal values for plasma proteins the following figures: total protein 5.6 to 7.5 per cent,

albumin 3.4 to 4.9 per cent; globulin (including fibrinogen) 2.3 to 2.9 per cent; and the ratio albumin: globulin 1.4 to 2.0.

Inanition has long been known to be associated with dropsy, as Kohmann<sup>1</sup> demonstrated experimentally in 1920. Many data have been accumulated regarding the plasma proteins in states of inanition in various pathological states, which has been well reviewed by Peters and Van Slyke.<sup>2</sup> In this category fall the hypoproteinemias of diabetes, pernicious anemia, of carcinoma of the stomach, and similar conditions in which adequate nutrition is interfered with.

In the degenerative forms of Bright's disease, lipoid nephrosis, and the nephrotic stages of glomerulonephritis, the serum proteins are frequently found to be less than normal, particularly the plasma albumin. In lipoid nephrosis large amounts of albumin escape through glomerular capillaries into the urine. This amounts to a sort of "protein diabetes" in which the loss of albumin in the urine occurs more rapidly than the rate at which it can be regenerated in the metabolism. In glomerulonephritis both albumin and globulin may be diminished, though albumin is usually relatively more reduced than globulin. In this condition only a part of the loss occurs in the urine, as it seems probable that all the capillaries of the body are abnormally permeable, and protein loss to the interstitial fluid may be general.

A complete catalogue of conditions in which hypoproteinemia is found would be out of place in this brief paper, especially since the subject has been so recently and so well reviewed.<sup>3</sup> The important thing from the standpoint of practical therapeutics is to take stock of our knowledge of the factors by which these proteins may be replaced or regenerated whenever they have been found to be depleted.

The first to attack experimentally the problem of determining the effect of diet on serum protein regeneration were Kerr, Hurwitz and Whipple.<sup>2</sup> These workers elicited the important facts that there were normal reserves of serum proteins, since they were found to be replaced during fasting after one or two initial depletions by plasmapheresis. They also found that the regeneration was more rapid if the dogs were fed liver rather than beef or milk protein. That the liver plays an important rôle in regenerating plasma protein was

shown by the delay in replacement after liver injury or Eck fistula.

Whipple<sup>2</sup> also showed that the fibrinogen of the blood was greatly reduced in the course of liver necrosis produced by chloroform.

Recently Lepore has reviewed all of the data regarding serum proteins in every case of recognizable liver injury observed on the Medical Service of the Strong Memorial Hospital over a period of 6 years. His findings have not yet been published, but they give indubitable evidence that injury to the liver beyond a certain point is associated with a lessening of the amount of serum albumin. In the more chronic forms of liver injury (cirrhosis) depletion of plasma albumin is observed long before the fibrinogen is decreased. The evidence that the liver plays a major rôle in the regeneration of serum albumin and fibrinogen is continually increasing. The mechanism governing the formation of the other globulins is far more obscure.

The problem of regeneration of depleted serum proteins in the nephrotic types of Bright's disease is one of great difficulty. The medical profession had first to rid its mind of the idea that a liberal use of protein in the diet was harmful. Gradually through the efforts of Epstein and others this fear was overcome. Keutmann and McCann<sup>3</sup> have convinced themselves, at least, that no deleterious effects are observed in patients with glomerulonephritis to whom large amount of protein are given in the diet. In nephritis no evidence exists that the intermediary metabolism of protein is disturbed. The "wear and tear" quota does not appear to be abnormal. Protein may be stored in the body readily when given in adequate amounts and subjected to the sparing action of a liberal supply of carbohydrate and fat. In true nephrosis the regeneration of plasma protein may occur more quickly as a result of protein deposition than in the case of glomerulonephritis, for the reason that the protein loss in the former is chiefly through the kidneys, whereas in the latter a general increase in capillary permeability exists, which renders it doubly difficult to retain plasma proteins in circulation, even though the total deposition of protein in the body may be enormous.

Holman, Mahoney, and Whipple<sup>1</sup> have recently performed experiments of great significance. Dogs which were fed sugar



by mouth and given blood plasma by vein could be kept in nitrogen equilibrium, suggesting strongly that there is a give and take between plasma proteins and tissue proteins. Whipple has shown that total plasma protein decreases during starvation but that this is masked by a simultaneous shrinkage in plasma volume, so that the percentage of protein is not much altered. In some recent experiments in the writer's laboratory the plasma albumin of a dog fell steadily during experimental hyperthyroidism until the protein loss was stopped by an adequate increase in the diet.

It is known that plasma proteins cannot be increased above normal limits by high protein diets. Holman, Mahoney, and Whipple<sup>1</sup> have shown that intravenous infusions of plasma neither increase the plasma protein values beyond normal limits nor cause their excretion in the urine. In other words, it is probable that the phenomena of specific dynamic action of protein are brought into play to limit the deposition of protein once the normal reservoirs are full. It seems not improbable that a new conception of protein metabolism may develop, in which there is a fairly close analogy to that of carbohydrate. The reserves of plasma protein may bear the same relation to amino acids as the glycogen stores do to the blood sugar. The stores of plasma protein and glycogen may be depleted if metabolic demands exceed dietary supply. Both may be refilled when the supply is adequate. Overfilling of the reservoirs may be prevented by specific dynamic action in the case of protein, just as the overfilling of the glycogen stores is prevented by glycosuria and fat formation in the case of carbohydrate metabolism.

Little can be said about our knowledge of the factors controlling regeneration of plasma globulins. Whipple's experiments indicate that they are more easily regenerated from dietary sources than are the albumins. High globulin values are noted in connection with those conditions in which Bence Jones proteins abound, namely, leukemias and myelomas. High plasma globulins are also noted in kala azar.

In general the clinical evidence suggests that globulins may be produced either in the hematopoietic tissues or in the reticulo-endothelial system, but definite evidence is lacking.

In closing the most important fact for the practitioner to remember is that re-

generation of plasma proteins requires a liberal (not excessive) supply of good animal protein, and this must be supplemented by an adequate supply of carbohydrate and fats if protein deposition is to be secured. There is no longer any excuse for the protein starvation which has been practiced in the past in treating nephritis, high blood pressure, and arthritis since this starvation entails definite injuries resulting from a loss of the valuable functions of plasma proteins.<sup>6,7</sup>

#### SUMMARY

1 Apart from the special functions of fibrinogen in exudation and blood clotting the major functions of the plasma proteins have to do with movements of water in the body, especially in maintaining a balance between plasma and interstitial fluid.

2 Starling's theory is briefly reviewed. Factors displacing the fluid balance are:

(a) Increased mean hydrostatic pressure in the capillaries. Venous stasis of heart failure, etc.

(b) Increased permeability of capillaries. Diffuse glomerulonephritis.

(c) Deficiency of plasma proteins, from inanition, nephritis, nephrosis, and hepatic cirrhosis.

3 Factors governing regeneration of plasma albumin are reviewed, insofar as they are known.

(a) Liberal sources of good animal protein, with amounts of carbohydrate adequate to secure deposition.

(b) The importance of the liver is shown by slow regeneration after liver injury, and by low plasma albumin values in hepatic cirrhosis.

(c) Factors controlling globulin formation unknown.

4 An analogy may be drawn between the relation of glycogen to blood sugar, and the plasma protein reservoir to amino acids. Depletion of the plasma protein reserve may be the result of inanition, or loss in the urine, or of any factors promoting a negative nitrogen balance. The reserve may be refilled by adequate nutrition. Overfilling is probably prevented by the specific dynamic action of protein.

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## CASE REPORT

### AN UNUSUAL CASE OF TRAUMATIC PERITONITIS ASSOCIATED WITH ANAL PERVERSION

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Traumatic peritonitis is not an uncommon occurrence, but the circumstances surrounding the case to be presented are unusual. Also, of special interest are the x-ray findings taken before operation; for men with years of experience in x-ray work have never had the occasion to interpret such a plate as is shown in Fig. 1.



Fig. 1.—Flat plate of abdomen. Note star-shaped shadow in left pelvis representing core of apple.

The case is that of a male patient, age 54, married, who presented himself at Lincoln Hospital on October 7, 1932, complaining of abdominal pain, vomiting, and constipation. Patient was very uncooperative, but with the aid of the doctor who referred the case to the hospital the following history was finally elicited.

Two days prior to admission to hospital, the patient inserted two apples into his rectum. Various attempts were then made by the patient to remove those foreign bodies, but failing of success, he consulted a physician who succeeded in removing but one of the apples.

By this time, in addition to abdominal pain, the patient exhibited fecal vomiting. He was therefore referred to the hospital by the physician for operative treatment of intestinal obstruction.

PAST HISTORY.—This patient, it was discovered, though married and having raised a family has practiced anal perversion for many years. The records of Lincoln Hospital showed that about fourteen months prior to the present admission the patient presented himself for the removal of a cucumber from rectum. On January 7,

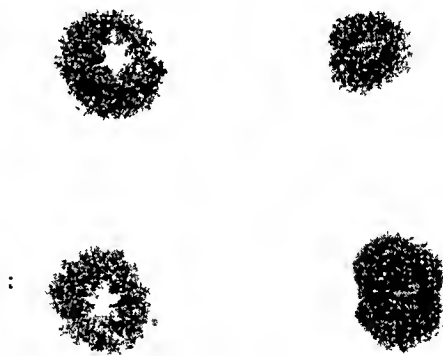


Fig. 2.—Above: X-Ray of the apple after removal from abdomen. Below: X-Ray of another apple.

1932, this patient was admitted to Morrisania Hospital, New York City, because of rectal bleeding, due to the presence of a stalked vegetable (a parsnip) in the rectum. This foreign body was removed under spinal anesthesia.

It is interesting to note that in both instances he gave a history of having been assaulted "has been overpowered by several men who forced the foreign body into his rectum."

Physical examination showed the patient to be well nourished, with anxious expression, and though he walked into the hospital, he appeared acutely ill.

Head, neck, and chest revealed nothing abnormal.

Abdomen was distended, tympanitic, and

tender throughout, suggesting the existence of a peritonitis.

The temperature was only 100° F., pulse 110, respiration 20, blood pressure 140/90. Examination of the blood revealed 20,000 white blood cells, with 87 per cent polymorphonuclears. The urine showed four plus albumin, four plus acetone, many hyaline and granular casts, and many white and red blood cells.

X-ray examination of the abdomen (flat plate, Fig. 1), showed that within the pelvis there was a star-shaped shadow within a circular shadow; the star-shape representing the core of an apple.

A proctoscopic examination was done prior to operation, and as will be seen later, proved misleading. The sphincter was markedly dilated, the anal and rectal mucosa appeared pale, and no foreign object could be detected.

A diagnosis of intestinal obstruction—mechanical in character—and peritonitis was made and patient was operated on five hours after admission to hospital.

On opening the abdomen it was found that the peritoneal cavity was filled with dirty-colored fluid, apparently soap suds given in enemas prior to admission to hospital. The apple, 2½ inches in diameter, immediately presented

itself, lying just above the brim of the pelvis surrounded by loops of small intestine and omentum which were greatly edematous, markedly congested, plastered together, and covered with fibrin. The entire peritoneal cavity showed an extensive generalized plastic peritonitis. At the rectosigmoid junction there was a rent in the anterolateral surface of the bowel, measuring about 2 inches in diameter. (The proctoscope evidently passed by the rent in the bowel wall unnoticed.) The mucosa was pale, there was no evidence of any recent bleeding or ulceration.

The abdominal cavity was cleansed, the rent in the bowel was closed by rows of continuous mattress and Connell sutures. Iliostomy was performed to drain the bowel above and the abdomen was closed with two cigarette drains.

The postoperative course was short, ending in death two days later.

An autopsy was performed and the following is the medical examiner's report: "An extensive plastic peritonitis with moderate distention of the intestines is present. A large area in the anterior aspect of the upper rectum and lower sigmoid is discolored and sutured. There is no evidence, microscopically, of persisting perforation. Generalized peritonitis seemed to be the cause of death."

1882 GRAND CONCOURSE

## TO PREVENT MALPRACTICE SUITS

After a searching inquiry into malpractice suits in Minnesota, the Medical Society of that State publishes the following suggestions for preventing these troublesome actions: x-ray all injuries; follow up all cases started; advise lockjaw serum in all injuries, even a scratch; don't attempt too much—call a consultation if it seems in the least advisable; follow standard treatment; inform the patient of all possibilities; carry a good protection policy; more ethical practice among doctors; stop criticizing other

doctors; less jealousy among doctors; every M.D. should belong to his medical society; unity in the medical profession; closer social relations with honorable attorneys; educate the doctor to do better work by postgraduate work in the different societies; do your best in every case and be careful; doctors talk too much; more care; no distinction between competent and incompetent physicians; publish names of physicians who testify against fellow physicians; expel doctors who testify against other doctors.

## DR. MAYO ON THE DOCTOR'S RELIGION

Religion is a loose and indefinite term, and may range from the faith of the devout ascetic to the fanaticism of the head hunter, but if the patient is to have faith in the doctor, the doctor, in turn, must have faith in something. That is the argument of Dr. William J. Mayo, who says in the *Epworth Herald*, in an interview: "The good doctor may not be orthodox, but he is fundamentally a religious man."

"There is a tendency of the times for a group of intellectuals, that is, persons who have been educated beyond their intelligence, to underrate the value of religion as the universal comforter in times of physical or spiritual stress, but to the mass of the people, religion has the same potency that it has had for two thousand years. The sick man needs faith, faith in his physician, but there comes a time when faith in a higher power may be necessary to maintain his morale and sustain his emotions. I do not know how the doctor can strengthen that faith unless he himself knows and practices the values of religion, not necessarily the creeds and

dogmas of any particular church."

This sentiment is endorsed by the *Journal of the American Institute of Homopathy*, which seems to define religion in terms of service, as it observes: Above all, in his work the doctor needs religion. The easing of a patient's mind, if not at times his cure, depends largely upon his confidence in his medical advisor, and that confidence will be inspired more often by what he senses of the spirit of his doctor than by what he perceives of acumen in advice. Few of us are such perfect actors that we can keep from our facial expression and tone of voice the contradictions which will destroy the effect we desire, unless the feeling within is kindled by the fires of inspiration.

From his work the doctor also partakes of religion. If there is any greater happiness in this world, for any individual, than the knowledge that he has been instrumental in relieving suffering and in making another mortal's travail easier, we have yet to find it. Such happiness is the very essence of religion.

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## EDITORIALS

### The Election in November

The medical profession should vote at the forthcoming election. It should cast its vote intelligently. As citizens we are interested in good government. We are not at all concerned with politics. The medical profession is vitally concerned with the protection of the public health. Naturally it is opposed to any and all measures that hamper the programs of health officials and of medical progress. It therefore opposes any interference with those who carry out health preventive measures such as vaccination against smallpox. It desires to continue to probe for the secrets of bodily disease and find successful measures to heal the sick, and needs uninterrupted opportunity to make studies upon dogs and other animals to accomplish these ends. The profession desires of itself to evolve a better medical service to the communities it serves, taking into account the changing times of this era. It desires to maintain the principles and arts of private medical practice. It desires to remain uncontrolled by either government, lay groups, or philanthropic foundations.

It is desirable that the physician should consider the candidates for public office, not only in the light of their intelligence and integrity, but also from the standpoint

of their comprehension of the conditions of medical practice. The profession is deeply concerned in maintaining the high standards enacted by the legislature for professional licensure. Each candidate should be queried as to whether he is opposed to animal experimentation; whether he would license any of the irregular healing cults, whether or not he would favor the payment of physicians for dispensary service and would favor an attempt to put an end to the abuses of medical charity. The profession should ascertain the candidates' stand on compulsory health insurance, and whether or not he favors the desire of the profession to remain master in its own house.

No physician in these times should cast his ballot blindly. Vote so that your ballot speaks for you.

### Medical Care for Indigents in New York State

Responsibility of a community to provide medical care to its poor as well as food, shelter and clothing has crystallized into general recognition in recent years. The citizen "in need" should find medical attention readily available; and the machinery of administration by the community should be so simple, so easy to understand, so soundly arranged that all concerned, sick man, physician, community welfare official can go into action, separately and collectively, *quickly and surely*.

Legislative enactment for regulation of provision of medical care to the poor and needy in New York State has been an evolutionary process, usually motivated irregularly and independently by minority groups toward more or less solitary objectives. The gradual accretion of law has followed no comprehensive and inclusive master plan. Orderly progress to co-ordinated effective action between the necessary agencies has not developed. Chaos, conflict, deficiencies, overlapping provisions and other faults confront and confuse those who should participate and co-operate understandingly. Ten different statutes and fragments of others, prescribe how public and semi-public assistance shall or may be given to the poor in need of medical care.

Under such conditions, how could medical service be furnished the indigents smoothly, easily, efficiently in accordance with the simple, all inclusive formula, "quickly" and "surely"? And in New York State this formula, in fact, is not satisfied.

For a long time aware of the situation, the Medical Society of the State of New York commissioned its Committee on Economics to delve deeply into this phase of the larger problem of providing medical care to all citizens of the State, with a view to formulating positive suggestions, positive plans that should do full justice at one and the same time to patients, taxpayers and physicians, now and in the future.

The first step has been taken in the field of medical care of indigents and completed during the last summer. Those parts of the laws which specify the actions, powers, privileges and restrictions, responsibilities and authority of those concerned with the administration of the laws or with the actual task of medical care have been extracted, briefed, published in a loose-leaf book of 121 pages. Copies have been circulated among physicians, County Societies, nurses, officials of welfare, health and hospital positions, with a request that each recipient note on blank interleaves personal comments on deficiencies, on conflicts, on needs for correction in the laws. When these annotated books return the Committee will classify and analyze the criticisms. Conferences may be held with those agencies both State and local having to do with various provisions of the laws relating to the indigent especially as concerns provision of medical care and hospitalization. Two objectives are being pursued. The one is simplification by amendment of the laws where necessary, the other, publication of a manual which shall guide all concerned with provision of medical service, be it casual or custodial care, to the poor and needy.

At this time, when revolutionary changes are being proposed from outside the profession, it should be enheartening to know that the State Society is actively moving toward carefully considered action, that it has advanced with due study and fore-

sight along the first most important pathway, medical care for indigents.

The Journal urges all those who have received this book for review, all those who will next receive it, to study, annotate and return it at the earliest moment. In their hands rests the success of this effort.

### Doctors, Dollars, and Disease

Many of our profession have recently received a little booklet, telling of an "educational" venture by the National Advisory Council on Radio in Education. This series of lectures is to be broadcast to the nation and can also be had for a small sum of money.

We concede the necessity of education in medical economics and would applaud any impartial instruction or even debate on topics concerned with private practice and with compulsory health insurance. We would particularly recommend report concerned with the economic aspect of the cost of community health insurance to the taxpayer. We would like to hear discussed by competent authorities who know American physicians as we do, what effect such a program would have on the way government employees would vote, and what the effect of their common interest in the taxpayer's money would do to the taxpayer. But the schedule consists of nineteen lectures by nonmedical men who want to tell medicine how to "carry on." Of the seven speakers who are physicians, two are avowed protagonists of health insurance; one is a president of a university which graduates doctors of medicine and runs a pay clinic in competition with them; and a fourth is a former president of the American Health Association whose interests have always been in that sphere. Actually there is but one of the physicians selected who by any stretch of the imagination can be termed a representative of the viewpoint of practicing physicians.

The majority of the lecturers are directly associated with foundations actively working for compulsory health insurance. Three are officials of hospital associations and the remaining five embrace a public health nurse, a journalist, two investigators in the field of public health and a professor of industrial relations.

The medical profession should make its protest felt against this misuse of the educational function which the Federal Radio Commission has placed in the hands of this National Council on Radio Education.

### The Medical Horizon

The profession is awake to the changing times. It has begun to experiment with means to evolve a plan of medical practice which shall maintain the priceless relationship between physician and patient and yet make concession necessary to the new order in the changing era.

The propaganda emanating from the Milbanks, the Filenes and the Rosenwald groups has influenced some parts of the lay public and some of the press into the belief that the profession was "reactionary" and acted as "obstructionists" to any changes. The profession would be considered "liberal" if they only would accept the hypothetical conclusion arrived at by the numerous P.H.D.'s who are engaged in attempting to change medical practice, "for the welfare of mankind."

In government circles, two of the Milbank people are delegated as a Committee on Economic Security to develop the medical side of this security. The profession has not even been asked to co-operate; and propaganda is flooding the country emanating from the National Advisory Council on Radio in Education.

Meanwhile, in California, the Alameda County Medical Association has plans in operation to provide medical care for persons with small incomes. In Oregon there are physician controlled health associations which are working out schemes in the furthering of economics approved by the county societies in their localities, and these service units are working throughout both Oregon and Washington. In Detroit the Wayne County Medical Society is engaged in a project which also promises success. In New York the principles enunciated in the Booth Report two years ago are finding practical expression through efforts to provide hospital care for those who are below the comfort level without disturbing the principles of private practice.

The American College of Surgeons contrary to distorted news reports has done nothing radical or blazed any new trails in

its recent declaration of policy. The president of the College says,

"In a country of so many diverse elements as those which make up the United States of America with the population here crowded in great industrial centres, there scattered in agricultural districts and in other places more widely distributed still over the practically unsettled and frontier districts of the North and the West, it is not to be expected that any single national plan for providing medical or surgical service to the whole community should prove everywhere to be satisfactory. The problem is essentially a local one to be studied and solved by the members of the individual communities and by trial and error, if by no other means. In these experiments it is of vital importance that the medical profession should take the lead."

*This is not advocating health insurance, nor does it constitute a striking departure of the principles formulated and passed by the last House of Delegates of the American Medical Association.*

The profession has never taken the stand that the existing system of providing medical care is perfect and that it would tolerate no change. On the other hand, it points with interest and pride to its own practical endeavors in many county societies where it has achieved appreciable reforms and where it promises to serve the needs of the communities entrusted to its care far better than either voluntary or compulsory health insurances could ever hope to do.

Organized medicine envisages its horizons, sees the propagandist who would wrest medical control from professional hands and opposes this with all its strength. It will throw its strength behind any reform whose benefits are demonstrable by reason or experience. It cannot accept experiments or experiences based upon findings in foreign lands, where compulsory health insurance delivers a service inferior in many respects to that which our indigents receive here.

The profession will not sacrifice medical standards, high quality of service and professional independence for results which where tried are not comparable to those of the existing American system.

# News

*of Interest to the Profession*

## LABORATORY AIDS IN THE DIAGNOSIS OF AMEBIC DYSENTERY

*Issued by The New York State Association of Public Health Laboratories, August, 1934*

More than 1 year ago (January 1, 1933), the NEW YORK STATE JOURNAL OF MEDICINE published a condensed report on the use of laboratory facilities by practicing physicians in New York State, which had been made by a special committee of the New York State Association of Public Health Laboratories. This association is composed of representatives of laboratories approved by the State Commissioner of Health. A separate and independent organization, it has collaborated effectively with the Division of Laboratories and Research of the State Department of Health in the development of laboratory service in the State. Thus, it is customary to refer many matters of policy or procedure to the Council of the Association for its opinion before action is taken. As one of the direct results of the recommendations of the Committee on the Use of Laboratory Facilities, a series of leaflets on laboratory aids in diagnosis is being issued by the association for distribution by the local laboratories represented in the association to practicing physicians in their districts. The leaflets are brief and practical, and are intended for convenient and ready reference. Two, on undulant fever and on typhoid and paratyphoid fevers, have already been reprinted in the JOURNAL. The third leaflet, "Laboratory Aids in the Diagnosis of Amebic Dysentery," is now published.

The clinical manifestations of amebic dysentery may range from a fulminating onset, tenesmus, abdominal pain, frequent discharges of blood and mucus marked toxemia, and death within a few days from intestinal hemorrhage or perforation, to a condition of seemingly mild, recurrent diarrhea. Symptoms suggestive of appendicitis may be present. Many symptom free carriers harbor cysts in the colon and are capable of spreading the disease. Amebic and bacillary dysentery are often so much alike in their acute phases that differentiation is possible only by laboratory examination of the stools.

The effectiveness of treatment depends upon early diagnosis and prompt institution of the specific therapy. Early treatment also reduces the likelihood of the serious complication, amebic abscess of the liver. Chronic cases are far more resistant to remedial measures than recent ones.

**SUBMISSION OF THE STOOL SPECIMEN**—Diagnosis of amebic dysentery may be made by finding in the stool either the actively motile vegetative form of *Entamoeba histolytica* or the characteristic cysts. In submitting laboratory specimens, the following points should be considered, but it is always desirable as an initial step to consult the local laboratory director.

(1) The stool must be fresh. This is essential, since the amebae may disintegrate soon after the specimen cools to room temperature. If possible the patient should pass the stool at the laboratory, if not, the stool should be col-

lected in a warm container, kept warm, and sent immediately to the laboratory. (2) The entire stool should be submitted, if this is impracticable, the specimen should include some of the bloody mucus. (3) Cysts are much more resistant and may be found twenty-four to forty eight hours after the stool has been passed provided it has not been allowed to dry. (4) Examinations on six successive days may be necessary to demonstrate the presence of amebae although three examinations are usually sufficient. (5) If no amebae or cysts can be demonstrated in stools passed spontaneously, a more satisfactory specimen may often be obtained by using a sigmoidoscope and scraping off with a small spoon curette a little necrotic material from the bed of an ulcer. (6) No oily medication should be given before collection of the specimen because oil droplets make examination for amebae difficult. (7) Since relapses are very common and may occur more than a year after an apparent cure, it is important to have specimens examined monthly for at least twelve months after symptoms have subsided.

**EPIDEMIOLOGY**—Despite the recent water borne epidemic in Chicago, the chief factor, apparently, in the spread of amebic dysentery is usually the presence of encysted amebae in the stools of convalescents or healthy carriers hence the predominantly endemic rather than epidemic occurrence of the disease. The carrier who is a food handler is a special menace. The disease is essentially one of tropical and subtropical climates but competent protozoologists believe it is far more frequent in temperate zones than is commonly supposed. It is probable that infection rarely results from the ingestion of the vegetative forms, they are promptly destroyed by the digestive juices.

## THE GROWING PROBLEM OF MENTAL DISORDERS

An increasing number of the physician's patients, year by year, are found to be suffering from some sort of mental upset, and it is becoming more and more important that the doctor shall carry in his equipment a knowledge of the latest findings and refinements of psychiatry. The cold figures are, in fact, well high appalling. The number of mental patients in state hospitals in this country amounted to 32,000 in 1880, in 1910, the figure had risen to 160,000, in 1929, to over 272,000! Putting it another way, 637 per 100,000 of the general population were mental patients in 1880, while in 1929 the figure had leaped to 2259.

These startling figures were cited by Dr. Frederick W. Seward, Jr., of Goshen, N. Y., in a paper read at a medical meeting in New York City to show that every physician should become more familiar with the com-

plexities of obscure mental disorders and their problems. Any family under the physician's care may produce a case where mental trouble plays a part. The diseased mind may develop a criminal trend, it may descend into feeble-mindedness, it may lapse into the confusion of insanity, it may sink into suicidal melancholia, and the family doctor is the one who has to diagnose the case and decide what is to be done. It is he who must foresee the sudden homicidal impulse, or the desire to leap from the window, and forestall it. He knows that the appendicitis case should go to the hospital, he should also know when the mental case should go to the mental hospital.

Diagnosis is often difficult, Dr. Seward points out. A wide variety of presentations appear in psychoneurosis. We meet with hysterical episodes, repressed wishes, mental conflicts, emotional experiences that temporarily break through and dominate the mind. We meet with anxieties, obsessions, morbid fears, feelings of insufficiency. Such cases can be very well treated by the general practitioner, although, of course, if he finds he is making no progress, he can turn them over to a psychiatrist. Some are better off in institutions, some are helped by psychoanalysis, some require a change of environment—each one is a problem by itself. One thing Dr. Seward would stress: a psychoneurosis case is not a "nervous breakdown." It is mental and must be so classified, or confusion results. And while speaking of classification, it may be helpful to mention that the Department of Mental Hygiene at Albany publishes a guide that contains a complete classification of mental disorders

and a brief outline of each, together with other information. It might well be kept in a desk drawer for ready reference.

The field of psychiatry is growing with amazing rapidity. The cases are multiplying so fast that their study is forced upon the doctor's attention, whether he wishes it or not. They have grown to be not only a medical but a social problem of national magnitude. It has become a field that no physician can neglect.

## ANNUAL CONFERENCE OF COUNTY SOCIETY SECRETARIES

At the conference in Albany, on September 11, 1934, a round table discussion was staged on the medical aspects of administration of the welfare laws. Three guests with expert knowledge and clothed with the authority of their official positions were invited to come prepared to answer questions. Dr. H. Jackson Davis, Director of Medical Care, State Temporary Relief Administration, Mr. Clarence E. Ford, Assistant Commissioner, State Department of Health, and Mr. F. A. MacIntyre, President of the State Association of Public Welfare Commissioners, gave generously of their time. Written questions had been framed in advance designed to clarify various points and one or other of the visitors was asked to reply to each query. The full detailed minutes will be found in this issue.

In connection with the Manual issued by the TERA (mentioned in the minutes) these questions and answers should be of real value for reference.

## MINUTES

### ANNUAL CONFERENCE OF COUNTY SOCIETY SECRETARIES MEDICAL SOCIETY OF THE STATE OF NEW YORK

*Hotel Ten Eyck, Albany, September 11, 1934*

The following County Societies were represented:

Albany.....Dr. Nelms  
Bronx.....Dr. Friedland  
Broome.....Dr. Lape  
                    (Substitute)  
Cattaraugus.....Dr. Garen  
Cayuga.....Dr. Chidester  
Clinton.....Dr. Schneider  
Cortland.....Dr. White  
Delaware.....Dr. Thomson  
Erie.....Dr. Beamis  
Genesee.....Dr. Di Natale  
Greene.....Dr. Rapp  
Kings.....Dr. Elliott  
                    (Substitute)

Livingston.....Dr. Doolittle  
Madison.....Dr. Mills  
Monroe.....Dr. MacVay  
Montgomery.....Dr. Pierce  
Nassau.....Mr. Neff  
                    (Executive Secretary)  
New York.....Dr. Dougherty  
                    Dr. Irving  
Oneida.....Dr. Hale  
Onondaga.....Dr. Mack  
Orange.....Dr. Shelley  
                    (President)  
Orleans.....Dr. Roach  
Oswego.....Dr. Brennan



Rockland.....Dr. Richards  
(President)  
Schenectady.....Dr. Cravener  
Schuyler.....Dr. Ward  
Seneca.....Dr. Lester  
Sullivan.....Dr. Payue  
Tioga.....Dr. Peterson  
Washington.....Dr. Banker  
Westchester.....Dr. Brillinger

Others present were: Drs. Bedell, Albany, President of the Medical Society of the State of New York; Podvin, Bronx; Hicks and Stover, Amsterdam; Conway and Lawrence, Albany; also, by invitation, Dr. H. Jackson Davis, Director of Medical Care, State Temporary Emergency Relief Administration; Mr. Clarence E. Ford, Assistant Commissioner, State Department of Social Welfare; and Mr. F. A. MacIntyre, President, State Association of Public Welfare Officials.

Dr. Dougherty, as State Society Secretary, had announced, when the first invitations were sent out to the secretaries, that the general program would be a round-table discussion of the administration of the Welfare Law, and asked that the Secretaries submit to the Executive Officer in writing requests for clarification of any part of the law or its administration. To assist in the conference, Dr. Davis, Mr. Ford, and Mr. MacIntyre were invited to be present to give their expert opinion in answer to these questions.

The conference was called to order by Dr. Peter Irving, Assistant Secretary of the Medical Society of the State of New York, at 10:10 A. M.; Dr. Joseph P. Garen, Secretary of the Cattaraugus County Medical Society, was elected to act as chairman of the conference. Dr. Garen first called upon Dr. Arthur J. Bedell, President of the State Society, who spoke as follows:

*Mr. Chairman and Gentlemen:* It is a pleasure to meet with you this morning and to extend to you our hearty welcome, for upon your activity, interest, and knowledge much of the success of the County Societies' endeavors depends. You will in all probability devote considerable time to economic problems, but before you concentrate, there are certain questions that I would like to ask you and wish you would, by raising your hands, indicate whether or not the information I ask is on file in your office and is available to the members of your Society:

*First:* Has your County Medical Society accepted the terms of an agreement made between the State Medical Society and the State Emergency Relief Administration?

Answers in affirmative: Seneca, Madison, Nassau.

*Second:* Those of you who have not done so, have you entered into modified agreements with a County Emergency Relief Administrator? And those of you who did not

enter either of these two groups, to what extent have you refused to cooperate with the County Relief Administrator?

Answers in affirmative to first part of question: Bronx, Tioga.

*Third:* Has your County Society designated representatives who can act for them in cooperation with the local emergency relief administrator to adjust difficulties as they arise?

No answers.

*Fourth:* Have you in your County Society any definite plan of medical service for indigent transients?

Answers in affirmative: Erie, Onondaga, Monroe, Genesee, Seneca, Nassau, Westchester, Cattaraugus, Livingston, Sullivan, Bronx.

*Fifth:* Has there been any change in your county in the method of giving medical service to those unable to pay for it?

Answers in affirmative: Clinton, Seneca, Schenectady.

*Sixth:* Have you any criticisms of the administration of the Federal Emergency Relief Administration medical services?

Answers in negative: Greene, Erie, Genesee, Bronx, Seneca, Westchester, Rockland, New York, Cattaraugus, Monroe, Nassau, Tioga.

Dr. Lawrence was then called upon to read the questions that had been received, referring each question to one of the three guests for answer.

The questions and their answers follow:

*Question 1:* Please describe the procedure to be followed in providing medical care to the indigent; in the rural districts; in the cities.

*Answer:* MR. MACINTYRE: It strikes me that this is a question that might occupy all the forenoon in answering. Some of the doctors whom I employ are twenty-five and thirty miles away from my office. The patient in question may be several miles from the doctor's office in either direction. I have, therefore, had an understanding with the doctors that when they are called by an indigent patient that they are to go, and that we are to fight out later the place of settlement of said patient. I mean by that, find out later as to what town or county the patient may belong. I tell the doctor to treat the patient exactly as he would a patient in whose family he has already been employed. There are certain rules, of course, covering what charges he can make for which the town or county can be reimbursed. If a doctor has to drive a good many miles or go out in the night, it is understood that he is to be paid more than the reimbursable charge. I then ask him to

render me two bills—one that is reimbursable and one that is not.

*Question:* Is the procedure any different in the cities than in the county?

*Answer:* MR. MACINTYRE: That question I cannot definitely answer, since each city has its own set-up, as allowed under the terms of the Public Welfare Law. Some have regularly appointed physicians employed by the day, month, or year.

*Answer:* DR. DAVIS: On page 46 of the Manual\* you will find the exact legal procedure which Mr. MacIntyre outlined. The difference between county and city will be found on pages 48 and 49.

*Question 2:* Please describe how a man injured on a TERA work contract is to be cared for? If he requires hospitalization who authorizes and who pays for it?

*Answer:* DR. DAVIS: The procedure is different from the handling of other cases only at the time of injury. The foreman in charge of the job has the responsibility for seeing that a man gets the necessary first aid and immediate attention, and the first thing he does in the way of reference is to turn the whole case over to the local commissioner of public welfare or to the person who is in charge of home relief. A man injured on work relief is under work relief provisions only so long as he is working. If he becomes injured the whole matter is turned over to the person directly responsible for giving medical care through home relief channels. As you will recall from the Act itself, the name of that section is a work relief disability allowance. The interpretation was made very simple so that the man who is injured on a work relief project, instead of getting two-thirds of his pay or whatever percentage he would get under the usual disability compensation provisions, immediately goes on his full relief budget for his family, so the amount that he gets is enough to cover all the needs of his family.

The welfare commissioner is the man ordinarily responsible for hospitalization. There are one or two exceptions; in one or two counties where they have a combined work relief and home relief set-up there has been a division of duties. In these instances the man who is in charge of combined work relief and home relief set-up is responsible for all services except hospitalization. The commissioner of public welfare is in charge of the hospitalization fund and he authorizes that hospitalization. Whoever is responsible for the usual orders for hospitalization with regard to any indigent person in the State

is responsible for that sort of authorization in injury on work relief. This is paid for locally and subject to 75 per cent reimbursement by the TERA.

(See the Manual, Chapter III, Section A, Item 3, pages 42 and 43; and Section 85 of the Public Welfare Law, page 47.)

*Question 3:* How is medical care provided for the old-age pensioner?

*Answer:* MR. FORD: By the county commissioner, in the same way he provides medical care for persons not eligible for old-age relief. One-half is paid back to the locality by the State. The rates paid by the public welfare district to the doctor for old-age security cases vary somewhat in the several counties and are not fixed by the schedules of the TERA.

*Question 4:* How can one secure nursing service for the aged?

*Answer:* MR. MACINTYRE: It usually happens that there is some good, kindly woman in the immediate neighborhood who has had experience in practical nursing. I have never had any difficulty at all in this matter. Some of the aged make their own selection of a nurse and we pay the bill and charge it to "Special Relief" as we are allowed to do under Chapter XIV-A of the Public Welfare Law. In case the aged person is very ill, or gives promise of being ill over a long period, we commit him to a hospital. It is understood in our county (Madison) that after a person's hospital bills reach \$65.00, further costs will be a charge upon the town of his immediate settlement.

*Question 5:* Does the TERA provide any medical care without the welfare officer's assistance?

*Answer:* DR. DAVIS: Not except through work relief. The TERA provides no home relief services directly. All medical care is authorized and paid for by the local welfare officer who is responsible, under the general provisions of the Public Welfare Law. (Note especially Section 83, reprinted on page 46 of the Manual.)

The local welfare officer authorizes and pays for all expenditures for home relief. The TERA is a special agency of the State designed to assist the local communities in the provision of more adequate relief. Such of the authorized services and expenditures provided by the local welfare office which comply with the restrictions imposed by the Emergency Relief Act and the Rules of the Administration may be eligible for reimbursement by the TERA. Such reimbursement is but another name for State Aid.

*Question:* DR. LESTER: What about an indigent veteran in home or hospital?

*Answer:* DR. DAVIS: In so far as authorized care comes under the TERA rules, it is handled in the same way as care for a regular relief case. "Relief for veterans under exist-

\* References made by Dr. Davis to "The Manual" in his answers refer to the printed "Manual of Rules and Regulations Governing Medical Care Provided in the Home to Recipients of Home Relief." Issued in June, 1934, by the Temporary Emergency Relief Administration, 79 Madison Avenue, New York City.

ing laws" was excluded from the scope of the TERA in the original Emergency Relief Act (Chapter 798 of the Laws of 1931). However, such relief was included in home relief by an amendment to this Act on May 1, 1933 (Chapter 646 of the Laws of 1933). Home relief for veterans is now included and handled in the same way as all other relief. (See the Manual, Section A, Item 2, page 42.)

**Question 6:** Is it possible to eliminate the offices of city physicians and surgeons under the TERA so that the local family physicians might take care of city indigent or welfare cases and get paid something, rather than have the city physician take care of them at a loss to the family physician both monetary and perhaps loss of patient ultimately?

**Answer:** DR. DAVIS: It is possible, yes. It has been done in one or two instances. The position the Relief Administration has taken is that the TERA fund is an emergency fund to assist in meeting additional burdens placed upon local communities by the depression. In order to consider a request for a change, eliminating salaried physicians from the local set-up, it is necessary first to submit adequate evidence that the service is inadequate; in other words, that the number of visits made by the city physicians, in relation to the compensation which they receive or in relation to the amount of work which one man can do, is such that according to reasonable standards these people who are being cared for cannot be given adequate care. In order to demonstrate this we have asked for records for preceding years to show the increased burden. If the request is accompanied by such records and it is demonstrated that the services available are not sufficient to give adequate care, one of two things can be done—a restriction may be placed upon the activities of the city physicians; they may be confined to a certain type of service, such as care for transients, a certain restricted group of home visits, and the remaining visits to indigents may be opened up to the individual physicians. Another way is a complete change opening up locally participation in the medical relief program. The position that the Administration has taken is that actual figures shall be supplied by the public authority responsible for supervising that work, as evidence for a change. Legally the TERA cannot act unless they have that type of information. (See the Manual, Section D, Item 1a, page 11; Section E, Items 2 and 3, page 13; Regulation 13, page 41.)

**Question 7:** What is the procedure to be followed in securing hospitalization for an indigent?

**Answer:** MR. FORD: There are two classes of hospitalization, emergent and non-emergent. First of all, in the emergent case, the hospital is required within forty-eight hours

to notify the welfare officer and, second, to accompany that notice by a certificate from the physician in charge saying that the case is an emergent one. When that has been done there has been a difference of procedure. We have gotten an opinion from the Attorney General to the effect that the welfare officer apparently is obligated to accept that case as a public case until he rejects it. There has been complaint both from the doctors and hospitals that after they have had these cases for a month or two they are finally rejected and no one gets anything. The second class includes those that are non-emergent. In those cases the responsible welfare officer should be consulted before the case goes to the hospital, and if he accepts the case as a public charge, then he arranges for hospital care and for the physician if he is employing the physician. If, as in some hospitals, no medical service is paid for from welfare funds, then the hospital takes care of the medical end of it. The welfare officer may or may not, in his discretion, employ the man who has been attending the case. He is under no obligation to do so and the man who has been attending a case for as long as five years may lose the case if the welfare officer so directs and the person is being cared for from public funds.

**Question:** DR. ELLIOTT: Does the welfare officer who, having a case in need of hospital care, transfers that case to a hospital in another district with a communication that he will be responsible for the hospital expense but not for the doctor's fee, act within the intent of the law?

**Answer:** MR. FORD: In my opinion, he is not acting within the intent of the law, as provided in Section 83, which reads: "RESPONSIBILITY FOR PROVIDING MEDICAL CARE. The public welfare district shall be responsible for providing necessary medical care for all persons under its care, and for such persons otherwise able to maintain themselves, who are unable to secure necessary medical care, except in so far as, in cases of communicable disease, that duty may be imposed upon the health officer by law or the State Sanitary Code. Such care may be given in dispensaries, hospitals, the person's home or other suitable place." I should say, answering your question, that while the law does not specify exactly what he shall provide, yet manifestly he is not carrying out the full intent of the law except in cases where the hospital prefers not to have medical fees paid.

**Question:** DR. ELLIOTT: What can the doctor do to prevent such unfairness?

**Answer:** MR. FORD: The only thing I can think of that can be done is that the doctor enlist the support of the hospitals in informing the welfare officer that they will not take care of cases unless medical care is provided. A hospital can do this better than a doctor.

The doctor should also discuss the situation with the welfare commissioner.

**Question 8:** Why should not the welfare commissioner pay for services rendered the indigent in hospitals?

**Answer:** MR. FORD: No reason, and I have held to the position before local Medical Societies that there is no reason at all why a doctor should be expected to give free care to indigent persons. Nobody else does it and the principle of paying the doctor has been recognized under the TERA act.

**Question:** DR. PODVIN: How or in what way can that be made to apply in cities like Albany or New York, where a majority of the indigent are cared for in city hospitals or clinics?

**Answer:** MR. FORD: The situation is a bit different in New York and Albany. Albany has no municipal hospital but cares for the indigent by arrangement with incorporated hospitals. In New York City there are both types of hospitals, but most of the indigent are cared for in the public hospitals. In New York City the situation could be changed by changing the city charter and in no other way. You know the procedure in changing a city charter. Here in Albany and in other cities of the same type it is less difficult; no amendment to the city charter or law is required, merely an arrangement with the city government and the doctors who practice that the doctors will be paid. That will require a change of heart on the part of city administration.

**Question 9:** Injured employee on TERA project, when taken to a hospital, doctor's bills not allowed: why?

**Answer:** DR. DAVIS: Probably because the physician's service was not authorized through the regular channels. The care of people injured on work relief projects is no different from any other authorized medical care except that it extends in scope into hospitalization and emergency care for persons certified by the foreman as injured in the course of duties connected with work relief. These are the only two exceptions.

**Question 10:** If an old-age pensioner is afflicted with a chronic disease that compels him to be a bed patient, what should be the procedure to secure it?

**Answer:** MR. FORD: The statute provides that old-age security allowance shall be for those who are not in need of institutional care. If a person is confined to bed, decision rests with the welfare commissioner as to the need for such care. If the person goes permanently to an institution old-age allowance ceases. If he is cared for in his own home or otherwise, then the arrangement for the medical care is made with the county commissioner, but the county commissioner may at any time order the case to go to the

county home or other institution and, if he does, the old-age allowance ceases and the doctor is paid only for such visits as the commissioner has authorized.

**Question:** Old-age pension authority ceases when the patient leaves his home?

**Answer:** MR. FORD: Yes, except for temporary care in a hospital. In those instances it is up to the commissioner, in cooperation with the State Department of Social Welfare, to decide whether care is likely to be temporary or permanent. If temporary and the welfare commissioner authorizes payment by the public welfare district, one-half is paid back by the State for the service rendered by both hospital and physician.

**Question 11:** Why should not the doctor be allowed the regular fee under the TERA?

**Answer:** DR. DAVIS: The TERA has nothing to do with fees. Any bill paid by the welfare commissioner which complies with general rules is eligible for reimbursement up to basis stated in these rules.

**Question:** DR. ELLIOTT: Is it not true that the TERA has a schedule of fees on which they base reimbursement to the local authorities?

**Answer:** DR. DAVIS: We have a basis on which to reimburse. Please note on page 29 in the Manual, Regulation 9, which reads as follows:

"Schedule of Reimbursable Charges. Introduction. *a.* It is realized by the Administration that with the funds available, it is impossible to compensate fully the physician, dentist or nurse for his or her professional services. The following schedule of charges, therefore, should not be considered as complete compensation for services rendered, but rather as a maximum basis for reimbursement, with due consideration for the conservation of relief funds to the mutual benefit of the patient, the professional attendant and the taxpayer.

"The following schedule of reimbursable charges was prepared following a conference in Albany, N. Y., on April 16, 1934, between authorized representatives of: the Medical and Dental Societies of the State of New York; the Administration and the State Commissioner of Health.

"*b.* The charges listed are hereby established by the Administration as the maximum eligible for reimbursement under these Rules and Regulations. However, no statement in these regulations shall be construed to prevent a local commissioner of public welfare: from making additional payments, for specified services, from local funds;\* or from making payment at less than the maximum charges stated in these regulations, where the local professional organization has agreed to the

\* Under Section 83 of the Public Welfare Law, see Chapter III, Section C.

authorization of specified services at a lower rate."

**Question 12:** Has the TERA an arrangement with the welfare officer to reimburse him from State funds for certain purposes? How does this affect agreements between the local welfare officers and the local Medical Societies?

**Answer:** DR. DAVIS: I shall cite an example: In the City of Port Jervis the welfare commissioner made an agreement with the local Medical Society to pay certain fees—operating on a fee schedule. This agreement went into effect before the TERA scheme started. The question came up in the following year. The mayor and welfare commissioner were concerned because they were not, under the basis of reimbursement established by the Relief Administration, eligible for getting reimbursement on the entire amount of their \$3.00 home visit or \$2.00 office visit. The doctors were united in their stand that they thought it was unreasonable to reduce the amount being paid, since the agreement included provision of free medical and surgical services in the hospital. They claimed that if the welfare commissioner was willing to pay a reasonable amount for services performed in the hospital, they would accept a basis on which the city could get a maximum return from the State. On the other hand, if the city wished to continue on the original agreement, they would be satisfied and would continue to provide free service in the hospital. The welfare commissioner asked for advice as to what the TERA attitude was toward this arrangement. After a study of past expenditures, from an economic point of view, I advised the welfare commissioner to continue on the existing agreement and that it would be more economical for him to pay out of his local funds the difference between the basis of reimbursement established and the locally adopted fee schedule adopted between the welfare commissioner and the doctors.

There is one thing always to be kept in mind in considering this sort of agreement; the welfare commissioner is very much restricted by the appropriations he has to work with. If he hasn't the money he can not extend his policy. If the Medical Society wants a change it should see that the pressure for the change is made on the budget-making authorities, in order that funds be made available to enable the welfare commissioner to be more liberal in extending the scope of his policy.

**Question:** DR. RAPP: Why should we demand full rates of the welfare commissioner? At the present time we have practically no indigents that we treat for nothing. I am speaking of the situation in Greene County, of course. Why should we expect the full

rate; why not be satisfied with a rate to cover our expenses?

In reply to a question asked by Dr. Bedell, many answered that they are still treating indigents free of charge.

**Question:** DR. BEDELL: How was the basis of reimbursement of the welfare officer reached?

**Answer:** DR. DAVIS: This subject has been presented in various discussions we have had in formulating these rules. Basis was variant. I think in the County of Schenectady a certain mass of material was presented to us for consideration with respect to a change, and estimate was made of actual cost of providing care and amount of free care being given.

**Question:** DR. BEDELL: How much does it cost anyone in this room to make a call?

**Answer:** DR. CRAVENER: It costs me \$2.33 for every patient that goes through my office. I figured this out last week.

Dr. Davis said he saw no reason why a doctor should be expected to treat patients on an absolutely cost basis when the grocer, etc., are allowed a certain percentage of profit.

**Question 13:** Has the welfare medical patient the right to choose his physician or specialist in case the welfare officials of the district do not employ specific physicians for this work? If the physician in charge of a welfare patient feels the need of a consultant, what is the proper procedure?

**Answer:** MR. MACINTYRE: Ordinarily he has that right. In the rural districts, however, it often happens that the indigent patient asks for the services of a doctor who is several miles away. I lately had a case where a sick man asked that his old family physician be called. It happened that this man had formerly lived in a town where this same physician had practiced for many years. The patient had moved some distance to the south of his old home and the physician had moved ten miles north of the town of his original practice. The two were, at the time the man fell sick, about twenty miles apart. In this particular case I could see no reason why I should consent to his calling the doctor whom he wanted. In that case I said "no" and gave him his choice of any one of several reputable physicians who were close by. In the main, however, I do not believe that I have the right to dictate as to what physician should be used. I personally have a choice as to who should be called in case there is sickness in my own family; I feel that the poor person has, within reason, the same right.

I always tell the physician to go ahead and get a consultant if he deems it advisable.

**Question 14:** What are towns and cities

doing about the fee schedule put out by the TERA; that is, for those cases that are injured while working for the city?

*Answer:* DR. DAVIS: The fee schedule used by counties and cities can be the locally agreed upon fee schedule and may be used as a basis of reimbursement to the extent permitted under the TERA schedule of "reimbursable charges." There is no absolute fee schedule on hospital charges for persons injured on work relief. Such charges are approved only on an individual basis as to what seems reasonable.

*Question 15:* Why are the nurses who were employed for an emergency on February 1, 1934 still on duty? Is the TERA or the State Health Department paying them?

*Answer:* DR. DAVIS: The nurses are still on duty because there are still a great many nurses in need of relief and there are a great many communities in need of additional bedside nursing service. They are paid as a State work relief project by the TERA and the local communities do not share in the payment for their services. The number of nurses on duty depends upon two or three factors; the availability of local supervision, the number of nurses in local community who are out of work and who would otherwise be on the relief lists, and the demand for their services. I can cite one County Medical Society that, before we instituted this service, agreed that it would be most helpful if they could have some kind of service to come in and check on a lot of the false alarms. The president of the County Society said he had been called out several times by people on relief lists to give attention for a heart attack, etc., and when he arrived he would find the woman out hanging out washing or doing some other work. He discovered that the so-called heart attack was merely a passing spell of indigestion. The scheme tried out was to have these nurses on call to make the initial visit and promptly call back for the doctor in cases where there was any indication of his need. No attempt is made by the nurses to make any diagnosis.

*Question 16:* Why don't more welfare officers seek advice and assistance from the County Medical Society in solving their medical care problems?

*Answer:* MR. MACINTYRE: I can only answer by saying that in too many cases the members of the County Medical Societies may perhaps not have welcomed the seeking of advice and assistance from welfare officers. I have consulted them and have a mutual understanding with them. I have found them cooperative except in very rare exceptions. You medical men should keep in mind that doctors are the poorest sort of bookkeepers. It is necessary under existing rules and regulations that the county or city welfare official submit a report each month to the TERA in

New York. It often happens that a doctor fails to present his bill until several months have elapsed. Inasmuch as a town welfare officer has to report to the county commissioner once each month, he is placed in an embarrassing position unless he has all of his medical bills for that particular month. The doctors also make the mistake of including bills for different kinds of service on that invoice. To illustrate: I lately had a doctor visit a certain indigent person in his home. His visit to this home was under the Wicks Act reimbursable to the extent of 75% of his charges for the call, which was \$2.00. The doctor immediately called me over the telephone and told me that the patient was suffering from acute appendicitis and must be immediately hospitalized for an operation. The doctor agreed to take the patient to the hospital in his own car. As you know, hospitalization, or any charges connected with it, is not reimbursable under TERA rules. This doctor in rendering his bill included the cost of transportation to the hospital along with his charge for the home call. This necessitated a considerable bit of correspondence between his office and mine and finally it was necessary to send my investigator to visit him in person, that he might render two sets of bills consisting of a single notarized bill for the transportation charges and an original and duplicate bill for the home call.

*Question:* DR. ELLIOTT: What can a County Society do when it has made repeated approaches to the county welfare commissioner to establish contact and the county welfare officer says he doesn't want any assistance but will arrange things to suit himself?

*Answer:* MR. MACINTYRE: Isn't there one thing that the men from the rural communities forget? That is that all home relief, no matter what it is, given in a home, in most of the counties in the State is the province of the local town welfare officer; the county commissioner doesn't figure in unless it be an unsettled case.

*Question 17:* Do the welfare officers realize that, since medical service can be had for the asking, some neurotics are inclined to make themselves a nuisance to the physicians?

*Answer:* MR. MACINTYRE: Since I have known welfare officers who are practically illiterate, I feel that the large majority of them would fail to know the meaning of the term "neurotics." This is to be expected; they get a very small salary—some of them have been paid the munificent sum of \$25.00 per year. It is not to be expected, therefore, that they should know the meaning of the term referred to above. They are as a rule, however, well acquainted with the people in their neighborhood and know the chronic cases better than anyone else. The physicians in my district also know that class of persons "who enjoy poor health."

**Question:** DR. RICHARDS: On page 39 of the Manual, where reference is made to the price of glasses, I want to ask Mr. MacIntyre how a public welfare officer is going to get frames provided at the prices listed?

**Answer:** MR. MACINTYRE: I don't think glasses can be furnished for the prices stated in the Manual.

**Question:** DR. BEDELL: This question has been brought to our office and I wish that someone who decided this fee could give me a little information. \* \* \*

**Answer:** DR. DAVIS: The basis for reimbursement was adopted by the TERA and was based on figures received from several of the larger welfare districts upon the actual bid prices being paid by welfare commissioners by agreements with oculist supply houses. The list does not include charge for examination. See the Manual, Regulation 8, Item 3, f, pages 28 and 29.

**Question:** DR. BEDELL: Are the glasses obtained from opticians or from doctors?

**Answer:** DR. DAVIS: From the doctor only. One thing to remember is that the TERA has only recently included special medical supplies of this sort as eligible for reimbursement. It is very difficult to get basis for special services. This adopted list of reimbursable charges, I want to emphasize, is the basis on which the State will participate. These charges were previously paid by local welfare departments out of local funds. There is nothing to prevent that from continuing; the welfare commissioner continues to be responsible for necessary medical care. The TERA reimbursement basis is just a way of helping out from State funds.

**Question:** DR. MACK: Syracuse operates under district physician plan. Not infrequently we are called to attend an indigent patient who gives history of having called city physician the night before. \* \* \* How has the cost of medical care been influenced and in what way in those cities in which the city charter has been changed and the district physician replaced by the family doctor? Also has the change resulted in more satisfactory care of the patient?

**Answer:** MR. FORO: The city charter will only need to be changed in those cities in which there is provision requiring it. If the city charter does not require it, then no such change is necessary.

**Answer:** DR. DAVIS: In those cities where charters have been changed the cost has not appreciably increased. Have much more adequate care and the doctors and patients are much better satisfied.

**Question:** DR. BRENNAN: If the doctors of a city would get together and refuse to do this work at those set fees, would it be possible for the State to send in a city physician to do the work?

**Answer:** DR. DAVIS: It is entirely up to the local welfare commissioner; he can do it.

**Question:** DR. PODVIN: I would like to refer to the question asked by Dr. Elliott. Practically all these medical questions are left to the decision of the local administrator. What, if anything, has been done or could have been done in order that the representatives of organized medicine could participate in, or act in some advisory capacity in the decision of these questions? For instance, in New York City we have a director of medical relief. In a recent conversation with me he said: "I try to make arrangements for medical care of home relief satisfactory to the patient and to the physician. However, I must then present this plan to a board composed entirely of lay people. These members are well meaning, no doubt, but they do not possess the medical mind or attitude toward such problems." This is not the fault of the Medical Societies, since we have devoted much attention to these questions, but thus far we have received little consideration from those administering in the Public Welfare Department; for example, a ruling was recently made that the patient on home relief could not select his own family doctor. So many complaints were made about this that the whole plan of having the patient call for the doctor of his choice was reintroduced. We are told that project doctors—the same as those used for CWA work—are being considered. We have asked for a hearing of this matter and an opportunity to discuss the situation and submit methods for the correction of these abuses. So far this has not been granted. We would like to know how to bring about such a procedure.

**Question:** DR. ELLIOTT: In making contact with the medical profession do you choose or hand-pick from the membership of the Society those with whom you desire to consult or do you go to the elected or constituted heads of the State and County Societies for contact? What is done when no local fee schedule exists? In making up your schedules, do you go back to bills that have been paid and by selection of minimum bills arrive at a schedule?

**Answer:** DR. RAPP: In our county we simply, at a regular County Society meeting, invited our welfare commissioner to be present and then took up these questions with him. Satisfactory in our county; no complaints. As yet we haven't been able to persuade him that he should pay for indigents in the hospital or obstetrical cases in the hospital.

**Question 18:** Is a welfare hospital entitled to charge fees and take in private patients?

**Answer:** MR. FORD: In reference to hospitals connected with county homes, our opinion has been that they are not authorized under the Welfare Law to function as hos-

pitals, but only as a part of the county home. Therefore, any provisions of law which apply to infirmary sections of county homes would be those that apply to all county homes. I know of no provision under which paying patients may be received in a county home. Public hospitals established under the General Municipal Law are authorized by this law to receive paying patients.

**Question:** DR. BEAMIS: The TERA was to be just a temporary arrangement. Is the object now to make it permanent and further extend medical practice by government agencies on the basis of subsidy from public funds? Who is going to pay for this elaborate program?

**Answer:** MR. FORD: Answering the first part of the question of Dr. Beamis, as to permanency: The Governor has authorized a commission to study the future of welfare work in New York State.

**Question:** DR. PODVIN: Is there a medical man on this board?

**Answer:** DR. DAVIS: I do not have the complete personnel of the board.

At the end of the morning session Dr. Mack moved that a vote of thanks be extended to Dr. Davis, Mr. Ford and Mr. MacIntyre. This motion was enthusiastically seconded and unanimously adopted.

After luncheon Dr. Davis described, informally, the administration of health insurance in Great Britain, as he had viewed it during the summer just past.

Dr. Irving informed the Secretaries that there will be space in the JOURNAL for articles other than those which had been presented at the Annual Meeting and which will be read at coming District Branch meetings. He also asked that all material pertaining to the County Societies or their members be sent to him.

**DR. PODVIN:** Does Dr. Irving think it would be worth while to devote some space to a discussion of economic problems occasionally?

**DR. IRVING:** We attempted to start this under "General Correspondence," but did not get very far. If it is not done this way it might look as if the JOURNAL endorsed the opinions expressed in these articles. We shall be very glad to have letters pertaining to the subject.

Dr. Garen suggested the following resolution which was unanimously adopted:

"That the conference of County Secretaries respectfully suggest to the Executive Committee that some provision be made for the formal official contact with the Temporary Emergency Relief Administration to the end of taking part in the discussion of problems that come before that organization."

**DR. DOUGHERTY:** Refer this to the Committee on Economics. Write me to that effect and I will be glad to take care of it.

General discussion then took place under different headings as indicated below:

Further report by secretary of the Monroe County Society on dispensary problem in Rochester.

**DR. MACVAY:** I have nothing further to add beyond what has been published in our bulletins, except that all of those interested in the plan think it is working very satisfactorily. Feel we are doing good work in keeping as many people in hands of the private practitioner as we possibly can.

Means of closer and more continuous working relationship between the State Society and the County Societies.

**DR. PODVIN:** There is one department in which we are very much interested and that is the Legislative Bureau. We should like to know the attitude of our local legislators on our medical problems. In our county we have eight Assemblymen and three Senators. We should like to know how they vote on our bills.

**DR. BRILLINGER:** I would like to get office to give us information as to what the State Society is doing. Economic questions just as important as legislative. How many men read the information in the JOURNAL?

**DR. ELLIOTT:** We are depending upon our own initiative in the construction of our mailing list. \* \* \* On at least three different occasions we have requested a list of official personnel of each County Society. Our committee will make it a point to inform the secretaries the first of each month what we are trying to do.

More definite plans for relations of the medical profession with the public.

**DR. LAWRENCE:** Dr. Sadlier has asked me to express his regrets at not being able to be present, owing to a very sick patient living fifty miles from Poughkeepsie. I think our County Public Relations Committees are beginning to find their place; they are working. I should like to hear from the secretaries whether their committees are active.

**DR. RAPP:** After about two years our chairman is fairly active. Think he is impressed with the importance of the work and I know that until last winter there were about three physicians who had a habit of advertising everything they did in their offices in the newspapers. Drew up resolutions which the Society adopted unanimously forbidding any names to be given to the newspapers in connection with any professional services rendered a patient.

Postgraduate instruction.

**DR. LAWRENCE:** Dr. Farmer telephoned



me this morning and expressed regrets at not being able to attend today's conference.

DR. MACVAY: We have a very active Public Health Committee in Monroe County and they brought up the question last year that we are all the time talking about educating the public and said, "Why not educate the practitioner?" The committee has tried to outline a year-round program of postgraduate instruction for the physician—I think with a fair measure of success; but we are not able to get to the people who most need the postgraduate instruction.

#### HOSPITAL INSURANCE

DR. ELLIOTT: We are urging a complete divorce of the economics of hospital care from that of medical care. Hospitalization costs are such a very precise calculation. Further, in any insured group it is a reasonably accurate factor that one in every fifteen will require hospital care each year. Hospitalization, therefore, becomes an insurable factor. If we permit hospital insurance to include the practice of medicine, in the matter of pathology, x-ray, physical therapy, anesthesia and other specialized forms of medical care, we permit the establishment of a wedge for socialized medicine. There is no point where the line can be drawn in a division of the practice of medicine between these specialties and other lines of activity. In the United Hospital Fund Insurance set up in the metropolitan district, before the enabling law was passed, there was an agreement that they would not include medical care. In every locality the profession must be lured to oppose any institutional encroachment upon the field of medical practice. Under this head I would direct your attention to one practice in the Brattleboro insurance scheme; namely, that of requiring the insured to pay an initial part of hospital care. This acts as a deterrent against malingering and the hospitalization of any inconsequential ailments.

The Public Health Law places the responsi-

bility for the provision of treatment for venereal diseases upon the local health departments. In the case of the indigent, does this health department responsibility include the care of all phases of the treatment of all types and stages of venereal diseases; e. g., the care of pus tubes and the provision of surgical treatment, if necessary, including the payment of the hospital charges, etc.; also the care of old syphilis, such as cardiac and aortic cases where the actual administration of anti-leucic agents is secondary and general medical care is primary? Where are the boundaries?

DR. LAWRENCE: It is the Health Department that definitely must pay for treatment of venereal disease cases. However, according to the law, they are supposed to take care only of cases in the communicable stage; but when is a man, or a woman, not in a communicable stage? \* \* \*

DR. GAREN: I asked this question and received an answer from the State Department of Health. The director of venereal diseases said that the local health department is obliged by law to provide treatment for all phases of venereal disease, no stipulation being made with regard to their communicability, and indigency by no means stressed. It is possible for a well-to-do person to demand treatment and get it.

Number of malpractice cases that have been indirectly started by doctors talking too much or trying to tell how much they know to the family of another doctor whom they may see in the absence of the regular doctor.

DR. LAWRENCE: A good many of our malpractice cases originate in that sort of way. I think this is something that the County Societies might well consider to see if they could devise a way of keeping doctors from talking too much.

Dr. Irving referred to two editorials that had been recently published in the JOURNAL on this question.

#### TO LET THE DOCTORS HALT CRIME

The courts and lawyers have failed, now let the doctors do it. That is the remedy brought forward by Mr. Roland C. Sheldon, Executive Secretary of the Big Brother and Big Sister Federation, in a recent address before the Yonkers Kiwanis Club, as reported in the *Yonkers Herald-Statesman*, and quoted in the *Westchester Bulletin*.

The "mushroom growth" of crime in this country was attributed largely to the neglect of the problem child. Reminding his audience that the annual crime bill in the United States amounts to four billion dollars merely for the apprehension, trial, and incarceration of prisoners and that the total cost of crime in one year amounts to fourteen billions of dollars, Mr. Sheldon asserted that prisons, no matter how modern and strong they may be, are "absolutely futile" in solving or reducing the crime problem.

Studies of problem children have revealed that there are as many as 83 causes for their condition which, according to Mr. Sheldon, "are bases later for incorrigibility and even criminality. Methods that have helped rescue the problem child in other cities and towns," he said, "are playground activities, municipal recreation projects, the elimination of slums, and general betterment of community health."

"The treatment of the problem child must also be individualized," Mr. Sheldon stated. "A program dealing with the children personally must be worked out carefully if there is to be any appreciable reduction in juvenile delinquency."

From the medical standpoint this implies the continuous use of the family physician, with consultants when necessary, and it opens up a whole new field of responsibility for the practicing physician.

# Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

## Charitable Hospitals — Liability for Suicide of Patient

A case decided a few weeks ago by one of the Appellate Courts of this State well illustrates the application of the rule exempting a charitable hospital from liability for the negligence of its doctors. The facts in the case must be detailed at some length for appreciation of the ruling of the court.

A certain M. had manifested peculiarities that had caused his family to become alarmed and he was examined with respect to his mental condition, and it was found he was suffering from involutional melancholia.

Arrangements were made with the B. Hospital for mental diseases, a charitable corporation, whereby he was admitted as a patient upon signing of an agreement that the sum of \$65.00 per week should be paid for his care. Upon his admission to the institution a history was taken which included indications of suicidal tendencies.

Upon the admission of M. to B. Hospital he was put in a private room in the Treatment Hall and at first kept under close observation by a special nurse. Somewhat later his condition had improved and he shared a nurse with some other patients. Still later special observation of M. was discontinued and he was put under ordinary supervision, treatment, and care.

After he had been a patient in the institution for about three months the doctors associated with the medical staff of the hospital considered that M.'s condition had so improved that he would be benefited by putting him in a more active group of patients. At this time a note was made in his record that the doctors in charge of his case felt that he no longer had any suicidal tendencies and he was transferred from what was known as a "Treatment Hall" to a "Convalescent Hall" where patients were given considerable freedom. The doctor in charge in the convalescent hall had issued instructions that, the patients in that hall should be taken walking about the hospital grounds in the morning; in the afternoon they should be taken on a walk away from the hospital grounds, all of which was for the purpose of treatment. He had further issued instructions

that the physicians in immediate charge of the patients in the convalescent hall should daily determine whether the mental or physical condition of the patients properly permitted them to be allowed the freedom of the convalescent hall privileges. The physician in charge was in a position at any time to direct special treatments which might be desirable and to prohibit a patient from being allowed to leave the grounds of the hospital.

It was the custom of the institution that when convalescent patients were permitted to take walks outside the hospital grounds they were to be accompanied by what were called "physical aides." Said physical aides were not orderlies or attendants, but they were extensively trained at the institution before they were permitted to undertake their duties of taking out the patients for exercise, and to have charge of them in the gymnasium. It was a rule of the institution that no more than seven patients were allowed to go outside the hospital ground accompanied by a single physical aide.

On a certain afternoon two days after M. had been transferred to the convalescent hall he was taken for such a walk outside the hospital grounds. Various physicians had observed his condition earlier that day and apparently he was in no way abnormal and seemed to be in excellent spirits. Two groups of patients, one consisting of six and the other consisting of M. and four others, each group accompanied by their aides, proceeded for a walk along a public highway near the hospital. The highway was not particularly congested with traffic at the time. A bus, which was traveling along the road at the time, stopped to discharge passengers some 50 or 60 yards from the patients walking along the road. When the bus started up again, and was traveling at a speed of about eight miles an hour, without any warning M., who had been walking along at the head of the group, suddenly got down on his hands and knees and pushed his head under the wheels of the bus, causing his death.

An administrator was appointed who brought an action in the Supreme Court to recover damages for the alleged wrongful death of M. The complaint in the case was based upon two theories: (1) that the defendant had breached its special contract that the deceased would be watched over, cared for, and observed carefully at all times, and (2) that the B Hospital had been negligent in sending the deceased, in company with other patients, in charge of but one physical aide, for a walk upon the public highway. The defendant denied the charges of the complaint and set up a separate defense that it was a charitable and beneficent corporation and that the deceased was a beneficiary thereof. The case came on for trial and at the conclusion of all the testimony the two causes of action were submitted to the jury for consideration. The jury found that there had been no breach of special contract which the plaintiff alleged, but found that the defendant's hospital had been negligent in the case and that such negligence was the proximate cause of the decedent's death. The jury awarded a substantial verdict in favor of the plaintiff as the amount of the pecuniary loss sustained by the next-of-kin of the deceased. The trial judge refused to change the findings of the jury and an appeal was taken to the Appellate Division.

Upon the appeal one of the chief points of controversy was whether sending the deceased on the walk was a medical or administrative act on the part of the hospital, it being the contention of the plaintiff-respondent that the negligence complained of was an administrative neglect for which the hospital would be responsible regardless of the rule exempting charitable hospitals from liability. The court summarized the law dealing with the extent of liability of a charitable hospital as follows:

"The law seems to be settled in this state that a charitable corporation is not liable to patients for the negligence of its doctors, nurses, and physical aides in the treatment of those patients, even though a patient paid for the care and treatment which was furnished him."

Counsel for the plaintiff sought to avoid the application of this principal of law by contending that the act which formed the subject matter of the lawsuit was not the negligent act of any doctor or nurse, but was an administrative act of the hos-

pital, for which the hospital would not be immune under the charitable rule. In answering this contention the Appellate Court pointed out that there was no case in this state which directly drew a distinction between administrative and medical acts of the kind presented by the record before the court. It held, however, that it was not necessary to decide whether a charitable hospital would be responsible for an administrative act in this case, since the court found that the act in question was a medical act, and hence immunity furnished to charitable hospitals in the principle of law above enunciated would be applicable in the instant case.

In applying the law to the facts of the case the court said in part:

"I am unable to see in what was done for the deceased in the instant case, anything other than what the records shows to have been proper medical treatment. If we could think of taking patients out for a walk as something quite impersonal, like the exercising of a horse, the act well might be considered administrative; but, accepting what the record shows, that nervous breakdowns with suicidal tendencies on the part of the victim are due to or bring about a loss of confidence and the courage to face one's problems, and promote the desire to find the easiest way out, through death, we can understand that the restoration of confidence and courage is the *sine qua non* to recovery and must of necessity entail risks or leave the case hopeless. The record does not show that restoration of confidence and cure could be brought about if the patient believed himself always under strict supervision. Perhaps nothing would be more depressing to him than a man at his elbow every moment. The record makes it clear to my mind that when a patient afflicted as was deceased is convalescing, little by little, more and more responsibility and liberty of action must be accorded him to help him regain confidence in himself. The hospital should not be held a guarantor. If it succeeds it means life, if it fails, the life remaining is without value. The evidence makes all this clear."

"On the part of the doctors there was an error of medical judgment, deceased was not as convalescent as it was thought, and due to his sad affliction, he succeeded in doing away with himself. No liability should attend his death."

# Books

## BOOKS RECEIVED

[Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from this column will be made for review, as dictated by their merits, or in the interests of our readers.]

A Textbook of Gynecology.—By Arthur H. Curtis, M.D. Second Edition. Octavo of 493 pages, illustrated. Philadelphia, W. B. Saunders Company, 1934. Cloth, \$6.00.

Conception Period of Women.—By Dr. Kyusaku Ogino. English Translation by Dr. Yonez Miyagawa. 12mo. of 94 pages. Harrisburg, Pa., Medical Arts Publishing Company, [c.1934]. Fuhrikoid, \$1.00.

The Dangerous Age in Men.—A Treatise on the Prostate Gland. By Chester T. Stone, M.D. 12mo. of 105 pages. New York, The Macmillan Company, 1934. Cloth, \$1.75.

Postures and Practices During Labor Among Primitive Peoples.—By Julius Jarcho, M.D. Octavo of 175 pages, illustrated. New York, Paul B. Hoeber, Inc., 1934. Cloth, \$3.50.

The Power to Love.—By Edwin W. Hirsch, M.D. Octavo of 363 pages, illustrated. New York, Alfred A. Knopf, 1934. Cloth, \$4.00.

Essentials of Infant Feeding and Paediatric Practice.—By Henry P. Wright, M.D. Octavo of 212 pages. New York, Oxford University Press, 1934.

Surgical Clinics of North America.—Vol. 14, No. 4. August, 1934 (Chicago Number). Published every other month by the W. B. Saunders Company, Philadelphia and London. Per Clinic Year (6 issues) Cloth, \$16.00; Paper, \$12.00.

International Clinics.—A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, etc. Vol. 3, 44th Series, 1934. Louis Hamman, M.D., Editor. Octavo of 327 pages, illustrated. Philadelphia, J. B. Lippincott Company [c.1934]. Cloth, \$3.00.

Bronchoscopy, Esophagoscopy and Gastroscopy.—A Manual of Endoscopy and Laryngeal Surgery. By Chevalier Jackson, M.D., and Chevalier L. Jackson, M.D. Third Edition. Octavo of 485 pages, illustrated. Philadelphia, W. B. Saunders Company, 1934.

Papers of Charles V. Chapin, M.D.—A Review of Public Health Realities. Selected by Frederic P. Gornham, Sc.D. Edited by Clarence L. Scamman, M.D. Octavo of 244 pages. New York, The Commonwealth Fund. Cloth, \$1.50.

Recent Advances in Ophthalmology.—By Sir Stewart Duke-Elder, M.D. Third Edition. Octavo of 434 pages, illustrated. Philadelphia, P. Blakiston's Son & Company, Inc., 1934. Cloth, \$4.00.

Experimental Physiology.—By Sir Edward Sharpey-Shafer, F.R.S. Fifth Edition. Octavo of 168 pages, illustrated. New York, Longmans-Green & Company, 1934. Cloth, \$2.20.

The Autonomic Nervous System.—By Albert Kuntz, M.D. Second Edition. Octavo of 697 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$7.50.

A Text-Book of Pathology.—Edited by E. T. Bell, M.D. Second Edition. Octavo of 767 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$8.50.

A Text-Book of Pathology.—An Introduction to Medicine. By William Boyd, M.D. Second Edition. Octavo of 1047 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$10.00.

Influenza.—By David Thomson & Robert Thomson. Quarto of 916 pages. Baltimore, Williams & Wilkins, 1934. (Volume X, May, 1934 of the Annals of the Pickett-Thomson Research Laboratory. Monograph XVI, Part. II.) Paper, \$17.50.

Human Sterility.—Causation, Diagnosis, and Treatment. A Practical Manual of Clinical Procedure. By Samuel R. Meaker, M.D. Octavo of 276 pages, illustrated. Baltimore, The Williams and Wilkins Company, 1934. Cloth, \$4.00.

Modern Treatment in General Practice.—Edited by Cecil P. G. Wakeley, D.Sc., F.R.C.S. Octavo of 426 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$4.00.

## BOOKS REVIEWED

External Diseases of the Eye.—By Donald T. Atkinson, M.D. Octavo of 704 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$7.50.

Chapter I reviews some very interesting historical points.

In Chapter II one discovers the heading "Anatomy of the Eyelids", but the whole matter being reviewed in two pages one feels ill prepared to embark on a detailed study of diseases of the eyelids to which that chapter is primarily devoted. We are disappointed in both the medical and surgical treatment of the chalazion, about which much can be said and done that the author has not touched upon.

The reviewer was dissatisfied with the superficial description of diseases of the lid margins. Certainly this region is worthy of more elaborate attention than is found in the paragraph on Blepharitis Marginalis.

The treatment of a hematoma with lead and opium wash is not quite in keeping with the modern attitude and the reviewer would suggest that the author include the use of iron salts in the treatment of ivy poisoning.

Under "Examination of the Lacrimal Apparatus", the reviewer feels that Schoenberg's "rod palpation" should be referred to in examination of the lacrimal gland.

Least the reader think that there is no merit in the work, it must be pointed out that the section on "Surgery of the Eyelids" is worth the "price of admission". Moreover, the short snappy sections on rare skin lesions, tumors, etc., are extremely helpful. The good things one can say about this fine work certainly outweigh the minor faults referred to.

JOHN N. EVANS

Chronic Nasal Sinusitis and Its Relation to General Medicine.—By Patrick Watson-Williams. Second Edition. Octavo of 262 pages, illustrated. Baltimore, William Wood & Company, 1933. Cloth, \$5.00.

The author ranks high in his specialty; the book bears a preface by Humphrey Rolleston; and it is now in its second edition. But as we carefully examine the material in the light of a recently changing attitude as regards focal infection we are bound to

feel critical of some of the teachings. The sinus is as potential a focus of infection as the tonsil, in the opinion of the author. For that reason indiscriminate operations on borderline cases would seem justifiable. "Cures" are promised in psychoses and in chronic rheumatoid conditions through operations on the sinuses. The radical practices of the late Dr. Cotton are heartily supported through generous quotations. That isolated cases may respond favorably in spite of operation does not justify wholesale cutting. Then again, that a germ may be cultured from a sinus does not speak for decisive infection; it may also point to contamination. One may doubt the wisdom of devitalizing tissue in the absence of definite proof to warrant interference. In adopting such an adverse attitude as regards the author's contentions, the reviewer is heartily in accord with Barker and other conservative workers.

Had the author confined himself to his specialized field, as in the second half of the book, instead of finding reasons for operating on sinuses in "borderline" cases, it would have registered a much more sympathetic response.

EMANUEL KRIMSKY

Recent Advances in Endocrinology.—By A. T. Cameron. Octavo of 365 pages, illustrated. Philadelphia, P. Blakiston's Son & Company, 1934. Cloth, \$3.50.

This addition to the "Recent Advances" series summarizes in a satisfactory way the status of endocrinology at the present time. The book is a comprehensive compilation of the literature on the thyroid, parathyroid, pituitary, pancreas, adrenals, and gonads with numerous comments by the author who is a biochemist.

The research and investigative work on the endocrines are very adequately covered but unfortunately the clinical application is not as completely discussed. The book will be found valuable by the experienced student of endocrinology as an authoritative compilation of endocrine research but is not of much assistance to the general practitioner from a practical viewpoint.

MURRAY B. GORDON

## A DISTRICT BRANCH MEETING ADDRESS

ARTHUR J. BFDLLL, M.D.

Albany

[When the President of the State Society visits the District Branches, he explains one or more phases of State activities. The following article is a summary of some of his remarks made at the meeting of the 2nd, 4th, and 7th Districts.—Ed.]

One of the functions of the President of your State Society is to keep you informed regarding the changes that are proposed in the methods of practice and the position your Society takes regarding them.

## STATE MEDICINE PROPAGANDA

There are many paid agents who go through the country sowing seeds of personal antagonism to organized medicine. Some are so clever in phrasing their expressions that they beguile the unwary and attract to their untried schemes many who believe them. It is not uncommon for these destroyers to openly state that they never have any fault to find with the present system of medicine, that it is unfortunate there is so much dissension in the ranks of organized medicine, and that we must consider the layman's point of view in the practice of medicine. If anyone raises his voice in opposition to their theories he is immediately regarded as an obstructionist, one incapable of appreciating life, and is accused of advancing ignorant opposition to change. Now I wish you particularly to note that there is such a thing as opposition to ignorant change. Almost invariably such propagandists exaggerate the hoped for results of their systems and belittle the efforts of thousands of consecrated physicians who have worked unceasingly and often without remuneration for the preservation of general health.

You are told that organized medicine was unprepared for the emergency that was forced upon it in the last few years of economic disruption. You might listen to such arguments and be convinced of their sincerity if medicine was in such a deplorable state, and I assure you it is not as badly off as many other professions. Even

our detractors admit that medicine is not the only division of society which to their minds is in a chaotic state.

I am, and I trust you are, quite satiated with the arguments that are advanced for a plan of medical service which says the physician is to be given his proper place in the sun, and then new schemes are thrust upon him to take from him his right to practice, and I refer in this connection particularly to the statements that the State Health Department wants you the practicing physician to carry on and then in the face of that announcement builds and subsidizes new clinics to compete with you and attract the patients whom you are prepared to protect and care.

I cannot see how it is possible for anyone to harmonize these facts. We are living in a strange age when those whose livelihood depends upon the physician hold him up to ridicule.

The State and local Boards of Health are only our agents and must not attempt to become dictators, for you and I as taxpayers support them.

Isn't it time that the logical body, organized medicine, be given its proper place as the Master in the House of Medicine? Because we have performed our kindly beneficent work without the flare of trumpets and clashing of cymbals, does it lessen its value or does it really reflect our genuine desire to prevent and cure illness?

Too many laymen receive their wages from outside medical agencies. We as physicians must take a stand against any more smooth, mystical word combinations. Those opposed to logical progress in medicine will say that I do not represent the majority of those who are in practice. Ask them for proof. Continue to ask for con-

firmation of their statements which are almost invariably spread by press and air as though the result of serious thought and study instead of being a reflection of their propensity to sit in the spotlight.

The National and State governments are at this time attempting to foist upon you, the practicing physicians of America, untried methods which, however, embody features that have previously failed when put in operation. It is said that organized medicine advances nothing in the way of constructive criticism. A ten-year-old school boy could make a phrase just as forcible and just as senseless.

#### PLAN FOR ANY NEW MEDICAL SERVICE

At the last meeting of the American Medical Association, the House of Delegates accepted the report of the Committee headed by Dr. Nathan B. Van Etten of New York. I trust that all of you have read it. It is the pronouncement of the American Medical Association representing one hundred and ten thousand practicing physicians.

*First:* All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

*Second:* No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of the medical service must be borne by the profession.

*Third:* Patients must have absolute freedom to choose a duly qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

*Fourth:* The method of giving the service must retain a permanent, confidential relation between the patient and a 'family physician.' This relation must be the fundamental and dominating feature of any system.

*Fifth:* All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

*Sixth:* However the cost of medical serv-

ice may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

*Seventh:* Medical service must have no connection with any cash benefits.

*Eighth:* Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

*Ninth:* Systems for the relief of low income classes should be limited strictly to those below the 'comfort level' standard of income.

*Tenth:* There shall be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession."

The origin of all criticism against the present system of medical practice comes from just two groups, the so-called philanthropic foundations and the State Boards of Health.

The discussions of the health of a community are always befogged by the overshadowing, sometimes obscuring clouds referring to the economic status of the patient. No one ever heard of a poor or a deserving patient being refused proper medical care.

The new set-up proposed by so-called social uplifters embodies the same old misconception of obligation on the part of the physician and lack of appreciation by the laity. In one place the socializers tell us that preventive medicine should be stressed and that the proper one to do this is the trained private physician, while at another time they suggest that he be relegated to the background and that medical service be dispensed in practically the same way that alcohol is to-day.

As an example of what State Medicine would mean, I ask each and every one of you to analyze the benefits that you receive from the Workmen's Compensation Law, those which you got from the C.W.A., and then those that you are receiving under the present Welfare Act.

#### THE STATE BOARD OF HEALTH FAILS TO COOPERATE

The physicians of some districts have had to endure undeserved criticism because of an unwarranted attack upon their skill. I refer to the scandalous attempt to discredit physicians by sending a letter regarding infant mortality to laymen.

My connection with this started when a letter was received from the State Com-

missioner of Health under the date of June 21, 1934, stating:

"I have recently brought to the attention of the mayors of ten cities and the boards of supervisors of ten counties the fact that their city and county were among the ten in the State which have the highest infant mortality rate, based on the five-year period 1929-1933. Attached is a list of the counties and cities together with the rates. In addition, I have sent to the secretary of the County Medical Society in each of the counties a copy of my letter to the local governing authorities."

This was immediately sent to Dr. Farmer, Chairman of the Committee on Public Health and Medical Education, who stated that on June 20th, he had received a similar letter.

He sent out a form letter to the secretaries of the ten county medical societies asking for information as to what action was being taken by them. As President of the State Society, I asked his Committee to investigate the matter, and to prepare a report for presentation to the Executive Committee at its September meeting.

Phases of investigation which Chairman Farmer suggested were:

1. Are the high infant mortality rates in the ten counties listed due to conditions other than those within the field of medical service or public health work?

2. Are there any suggestions to be made for the improvement of medical service or public health work within the ten counties?

3. Are there any suggestions to be made for the improvement of the Governmental health services in the counties?

4. Emphasis upon the importance of the health agencies conferring with the county medical societies before planning or inaugurating any new public health measures.

The "Statistical Report of Infant Mortality for 1933 in 985 Cities of the United States" published by the American Child Health Association contains the following paragraph:

"The large fluctuations which occur in the infant mortality rates for small cities and which have no interpretative significance have been reduced to a minimum by the policy pursued in this report. However, there are other possibilities for error in the interpretation of these rates. As we have shown, failure to correct the residence may

produce fictitiously high or low rates. But even when this correction is made, one is not justified in using the infant mortality rate as a reliable measure solely of the quality of public health effort in a community. The infant mortality rate is a resultant of a number of causes, such as social and economic status, family customs characteristic of different race and nationality groups, climatic conditions, the amount of modern medical service, as well as the amount and quality of public health effort. For this reason we should be careful in ascribing a change in the infant mortality to the one of these many influences in which our major interest lies, namely, organized preventative medicine and public health."

Now gentlemen do you believe that this was an attempt to cooperate with the physician or one to belittle the medical man?

Don't be too lenient with those who constantly refer to the "bickerings of medical men." It reminds me of many of the smoke screens that fill our daily papers to take the reader's attention from the underlying basic principle of self-preservation and sound government.

You elect your delegates to the House of Delegates of the Medical Society of the State of New York, the legally constituted body to represent you. If our critics would in simple justice state the facts back of their controversies and carry their complaints or suggestions to the legal body, progress would be made and much more harmony result.

#### PUBLIC HEALTH COUNCIL

Agencies outside of organized medicine have for a long time attempted to dictate how you and I should practice. Consider the membership of the body which promulgates the rules of health for the State of New York and note that organized medicine as such has not a single representative on the board. Surely this does not seem to be an attempt at the proper cooperation between the Department of Health and the Medical Society of the State of New York.

Gentlemen, for the good of your patients protect them from the devastating, devitalizing even lethal effects of politically controlled medical service.

344 STATE STREET

## EXPERIMENTAL STUDIES ON RADIATION

FRANCIS CARTER WOOD, M.D.

*New York City*

The facts about radiation, both from radium and x-ray, which interest radiologists are chiefly the biological aspects. The radiotherapist may use physical methods for measurement, but primarily these are of secondary interest to the changes in the body produced by the absorption of the rays. The roentgenologist cares but little about the biological side, except as defining the limit of the number of successive pictures which he may safely take on a given individual. He is not interested in physics in particular, because he uses unfiltered radiation or lightly filtered radiation for his photographic results, and with the exception of special forms of apparatus, like Bucky grids which apply physical principles to the elimination of scatter, his technic has little more reference to physics than the practitioner who listens to heart sounds with a stethoscope or attempts to elucidate the results of an electrocardiogram. Therapy, on the other hand, demands less physics and more biology, and it is the biological side that will be taken up in this paper.

Crude experiments in biology began very early. Becquerel carried a tube of radium in his vest-pocket to London to demonstrate the interesting qualities of the recently discovered radio-active elements to the Royal Society, and shortly afterward he noticed a skin burn. The early picture takers also had some astonishing, occasionally very painful, biological results. There is the famous case of the gentleman in Chicago who had a picture taken of his head and became permanently bald. My early experiences in 1898 as radiologist to St. Luke's Hospital also include a horrifying denudation of one side of a lady's head in attempting to get a picture of her sinuses. One of the earliest biological experiments, about 1897, was by Exner, of Vienna, who deflected beta rays from some radium and showed that the biological effect of radium radiation was not due to the gamma rays, but to the negatively charged electrons. This was confirmed by Abbe years later, and now, of course, it is a matter of common knowledge since the development of cathode ray tubes.

It was in 1913 that that gifted physicist, William Duane of Harvard, while we were discussing some experimental work which I was beginning with radium, told me that I would find that the damage to a cell would be due entirely to the absorbed energy and that this energy would be derived from electrons set free inside of the cell by the impact of the gamma or x-rays upon the atom. This prophecy has been amply confirmed.

The qualitative study of the effects of radiation of both types began early, about 1900. These consisted in the exposure of tissues, chiefly human, to radiation and the study by histological methods of the microscopic changes produced in the cells. Perhaps the most important earlier piece of work was published in 1918 by Krönig and Friedrich, as a supplement to *Strahlentherapie*, on the physical and biological foundations of radiation therapy. At that time the measurement of x-ray was still in a rather rudimentary state. Although Perrin and Duane had suggested the use of the ionization of a measured prism of air between two plates as the best system for quantitative measurement of x-radiation, no accurate method of measuring radium was then known, nor is there yet a method of comparing by ionization the output from a radium capsule and an x-ray tube. All such determinations are still approximate. Krönig and Friedrich improved the open ionization chamber and made some fairly accurate determinations, while the practitioner was still relying on Saboraud's tablets and Kienböck's dosimeter. The small thimble chambers which were then employed showed errors, due to the fact that they were made of metal and had a marked wave length effect. These pioneer investigators, however, did a great deal of preliminary exploration with water phantoms, produced approximate depth dose curves and studied the effect of various filters and the relation of the size of the portal to dosage. About this same time Prime and myself began the investigation of the lethal effect of gamma rays on tumor tissues. Actually this work was begun in 1913, but the necessity of learning a good many funda-



mentals about the effect of radiation from radium tubes, including the necessity for correction for the tube length, and the immense number of animals which were required in the experimentation, prevented the publication of the results until some years afterward. What we worked at was the question of whether twice as much radium was twice as effective in killing tumor cells, with or without heavy metal filtration. We found that within certain limits, double the dose of radium produced twice the biological effect, and that with decreasingly smaller doses a threshold was reached beyond which no effect occurred. We then attempted to find out whether the effect was influenced by the time of exposure, that is whether a smaller quantity of radium produced the same effect at a longer time as a larger quantity at a shorter time, and we found this to be true, with exposures varying in about 1.8. These tests, however, were made on tumor cells *in vitro*. Now we know that by greatly dividing the dose in the animal or human being the healthy tissues can repair. Thus, to produce a given biological result the times of exposure must be comparable, so that if the exposure is suitably prolonged, instead of 500 r causing an erythema of the skin 1,200 to 1,500 r can be given by diminishing the quantity and prolonging the time. Kromig and Friedrich used frog larvae as their biological object, and they found that with equivalent doses and intensity unfiltered  $\gamma$  ray gave the same biological effect as  $\gamma$ -ray filtered with one millimeter of copper, in other words, the wave length was an unimportant factor. But other experiments did not confirm this. The differences are probably due to inaccuracies of measurement in the aluminum chamber. Thus they found that gamma rays measured by an aluminum chamber had a much greater biological action than  $\gamma$ -rays filtered through one millimeter of copper. We now know that these results are due to the wave length factor of the chamber. Working with skin erythemas, they found that a 25 per cent difference in dose produced no visible difference in the color. On the other hand, using the same aluminum chamber and a filter of one millimeter of copper or three millimeters of aluminum they found that equal doses of  $\gamma$ -rays had the same effect on a human carcinoma. They finally reached the conclusion, however, that biological action was

independent of the wave length and only dependent on the absorbed energy. From the erythemas they drew the conclusion that with equal total doses the greater intensity gave the most marked reaction, but with differences amounting to not more than 1.5 the activity of the reaction was independent of the intensity. They noted that some human tumors were sensitive and some resistant to radiation. They also found no temperature coefficient for the frogs' larvae.

Further advances depend on the improvement in the technique of measurement, and as this technique is available chiefly with  $\gamma$  ray, most of the modern experimentation has been carried on with this agent rather than with radium, which is unsatisfactory because of the impossibility of exactly reproducing experimental conditions. Using an accurately measured, continuous radiation of  $\gamma$ -ray I finally showed that there is no difference in the biological effect between equal quantities of radiation of about 0.2, 0.4, and 0.6 angstroms and that the type of filter made no difference. This has been challenged, but if it is remembered that (1) the effect of radiation is entirely due to the beta rays, as previously stated, (2) as the differences between the beta rays sent off by the atoms at different wave lengths only vary in speed, (3) as the ionization chamber measures the ionization produced in a column of air and (4) the destructive effect on the cells is due to this ionization, there is no reason why there should be any wave length effect, for it is scarcely possible that the cells will recognize and respond, by any biological change, to electrons of slightly differing speeds. This question has been finally settled by Packard, who used more convenient and susceptible material than animal tumors, the eggs of *Drosophila*. Using radiation wave lengths from about 1.6 angstroms to 0.05 angstroms, and measuring the radiation with the greatest care the effect on the flies' eggs and the roentgen dosage has been found to be parallel. Exposure to radium produces a lethal curve of exactly the same shape as that produced by  $\gamma$ -radiation, and as at 550 kv, which is the highest voltage which was available in Packard's experiments the radiation covers a portion of the gamma ray spectrum, it is probable that no difference in biological action exists between radium and  $\gamma$ -ray. Holthusen has brought additional con-

firmation of this fact, showing that the histological changes in tissues rayed with x-ray and with radium, giving the same amount of radiation over the same time, are exactly alike.

About 1904 much research was begun exposing the eggs of sea-urchins of ascaris, frogs, and various larvae to radiation. Bohn and Perthes did some interesting work in this connection, which was chiefly directed to finding out whether there was a stimulating effect from radiation. An enormous amount of work has been done with a great variety of biological material without definite conclusions. The present belief is that there is no stimulating effect produced by roentgen rays or gamma rays. Nor have the most varied attempts to enhance the action of radiation by the introduction into the tissues of heavy metals or of fluorescent materials produced any effective results. Especially the use of fluorescing substances is based upon a complete misunderstanding of the nature of fluorescence which is a molecular and not an atomic phenomenon.

In 1907 Dominici and Regaud began to study the effects on tissues of the filtration of radium and x-rays and discussed the question as to whether there was not a better selective action on the cells if the radiation was given at a slower rate, or, what was the same thing in this instance, more highly filtered. About this period Bergonié, Tribondeau, Regaud, Lacasagne, and Halberstädter also began to study the conditions of maximum damage to the cell and found that when the cell was dividing, it was much more sensitive to radiation than in the resting phase, and that radiation checked cell division and might wholly inhibit mitosis, but that a few hours later division began again, but was abnormal in type, and usually led to cell degeneration.

The next important step was to study on suitable material the effect of varying the rate of the radiation. For this purpose Regaud selected the ram's testicle as offering a material which was highly sensitive to radiation, contained structures which are in active mitoses, and thus had a superficial resemblance to neoplastic tissue. He found that it was possible to sterilize the testicle completely by single doses of radiation, but that the damage to the skin was excessive. However, by dividing the dose in a suitable manner and by giving radiation on successive days, he found

that it was possible to produce complete sterilization without damage to the skin. These experiments formed the foundation for the clinical studies of Coutard, who, since 1922, has been carrying on a careful study of patients rayed with divided doses. Originally he thought that it was the high filtration which produced the elective effect; recently, however, he has come to the conclusion that while the high filtration of 2 or 3 millimeters of copper, for example, are advantageous in shortening the average wave length of the beam and making it more homogeneous, hence increasing the average depth dose, in the more superficial tumors such high filtration or high voltages are unnecessary and just as good results can be obtained by spaced radiation of a much lower voltage. It is the time factor, then, which is important in permitting the restoration of the healthy tissues in the intervals between exposures, while the neoplasm, being poorly provided with blood vessels, nerves, and other controlling structures, does not regenerate as completely as the normal surrounding tissues. This differential is a necessary condition for the successful treatment of neoplasms. During this time also there were a large number of clinical studies made upon the sensitivity of different types of tumors, and rough gradings began to appear in the textbooks. In the last five years the extension of the morphological groupings of tumors has been very great, and an attempt has been made with some success to correlate morphology with tumor sensitivity, but everyone who has any experience in these matters will grant that the results are not mathematically accurate, and that occasionally marked exceptions occur.

The fundamental work of Regaud, however, was of extraordinary importance in changing the whole attitude toward radiation and lead to the abandonment of the administration of massive x-ray doses at a single sitting, or the use of unfiltered or unsufficiently filtered radium, which produced destruction of the healthy tissues as well as of the tumor cells.

Recently the question of increased voltage has rather dominated the field, despite the publication of Packard's results, which showed that the higher voltages were no more effective on the individual cell than the lower. Since we already possess the equivalent of a million volts in radium—and

radium has not been shown to be any more effective in treatment than  $\gamma$ -ray, with the sole exception that it is possible to apply radium locally and over longer periods without discomfort to the patient—nevertheless, even with radium, not as good results have been obtained in tumors of the upper air passages as Coutard has shown can be obtained with  $\gamma$  ray at a voltage not to exceed 200 kv. It is, therefore, very improbable that there is any great advantage in the high voltages. The expense of tubes and apparatus for generating and using 500,000 or 600,000 volts, the amount of current required, and the spacing and lead necessary for the protection of the staff and the patient, all complicate the situation. The real advantage, of course, is that with high filtration, for example, 2 or 3 millimeters of lead, a very short wave length beam is produced at 600 kv with a depth dose considerably larger than the maximum which can be produced at 200 kv at any filtration and any reasonable skin focus distance. Nevertheless, it is possible to get at 10 cm a 50 per cent depth dose with 200 kv. With 600 kv the increase is only about 25 per cent. Whether the practical benefit of this increased depth dose will in any sense compensate for the increased cost to the patient is a matter for careful clinical study. Obviously this development means the concentration of patients in institutions, for the expense removes the apparatus from the range of the ordinary radiotherapist. Rather the attitude is, among the more conservative workers in the field at the present time, that it

is far better to treat with lower voltages and to attempt to apply the radiation to fit the biological factors of the tumor, not wasting time on those patients whose neoplasms cannot be suitably treated by radiation, but to concentrate on the careful dosage of those types of tumors which we know are susceptible to effective treatment. In the meantime, experimentation can be carried out by those who have high voltage plants to determine whether anything is gained by the substitution of 600,000 for 200,000 volts.

INSTITUTE OF CANCER RESEARCH,  
COLUMBIA UNIVERSITY

#### DISCUSSION

DR DOUGLAS QUICK. It is always refreshing to hear from the laboratory side of cancer investigation. We are fortunate indeed to have such an able research veteran as Dr Francis Carter Wood present the subject. In spite of the many and varied disappointments along the way from this point of attack on the cancer problem the information obtained whether the findings be positive or negative all adds to the sum total of our cancer knowledge. While I cannot agree fully with Dr Wood on the dependability of laboratory animals as test objects for therapeutic agents and irradiation effects, it is nevertheless true that work of the past few years has shed most important light on many phases of the complicated neoplastic process. It would seem that the more recent findings have greater practical bearing than heretofore. Dr Wood has already pointed out a number of instances in which the laboratory findings have been directly applicable to the practical problem of the chemical care of the patient. The biochemical data which are being accumulated give substantial encouragement toward an ultimate fundamental specific therapy. The laboratory investigator is no longer an individual apart. He and the clinician are much closer to-day than at any time before.

#### NEVER AGAIN' FOR THIS DOCTOR

He felt flattered at first when informed in a nice note that he had been placed on the 'approved' list to examine the employees in Wichita Kansas, of a great world wide oil company. A little later, as the story is told in the bulletin of his County Medical Society a worker arrived for examination the doctor brought out the blanks with their long list of questions, and the examination began. The questions seemed endless and three hours were gone before they were all answered. Never mind, the doctor was determined to do a good piece of work, and when it was over he heaved a sigh of satisfaction and admiration of the thoroughness of the company. Not till then did he notice on the blank in small type words "A fee of \$2 will be allowed for this examination." He also noticed a blank space for Remarks' which he promptly filled. Here are his remarks: 'Dear Sirs, I am enclosing completed examination of your employee, Mr So and So. It might interest you to know that the enclosed report of the examination required

more than three hours of my time. For this you state you will allow the munificent fee of \$2.00. Now I have two objections to being on your approved list of examiners. First I feel that the fee you allow is about one fifth of the minimum amount that any doctor can possibly afford to charge for this service. You would not ask your plumber to work for three hours for \$2.00. Even if such a request were made your plumber would decline. You would not find a barber who would work the same length of time for the same remuneration. I am a physician with an education which represents a greater expenditure of money than do the educations of your plumber and your barber. So I think, therefore, that your allowance is too small. Second I cannot accuse myself to the policy you have adopted of dictating to me what I shall charge for my services, particularly when your dictates fall at least 80 per cent short. Will you kindly remove me from your approved list of examiners?

## THE IRRITABLE COLON

H. WALDEN RETAN, M.D., F.A.C.P.

*Syracuse*

Chronic irritable colon is a functional disturbance of the colon resulting in abdominal pain, disturbance of bowel movement and, in most cases, in flatulence.

**ETIOLOGY.**—It is the universal opinion that the continuous use of cathartics is preëminent in the production of the irritable colon. Bran and whole wheat food in some, raw fruit and vegetables in others, mineral oil and psyllium seed at times, contribute their effect.

Besides medication and food, any influence which tends to accelerate peristalsis will have a corresponding tendency to produce the irritable colon syndrome. Thus, achylia gastrica, in which food is improperly prepared in the stomach for small-bowel digestion, is commonly associated with colon symptoms. Hyperthyroidism, with its associated increased nervous irritability affecting the bowel in some cases sufficiently to produce diarrhea, is almost invariably accompanied by some degree of intestinal disturbance. Allergic reactions, in which diarrhea follows the ingestion of some disturbing protein, will cause this syndrome even though of short duration.

Chronic infections in the gallbladder, appendix, pelvic organs, and foci of infection in teeth, sinuses, and tonsils are mentioned as factors but usually are of secondary significance.

An unstable constitutional make-up is found quite frequently in patients who suffer from irritable colon. Likely to develop neurosis, these people also easily fall into the cathartic habit. My experience coincides with that of Dr. Sarah Jordan,<sup>1</sup> who in a study of 1,000 cases concluded: "(1) There is a group of patients who have gastrointestinal symptoms due to a functional disorder of the colon, caused by specific irritation and not dependent on a centrally neurogenic cause. (2) The irritation is usually due to the use of cathartics and enemas. (3) There is another group of patients with unstable colon who have associated neurogenic symptoms. With treatment and relief of gastro-intestinal conditions the neurotic manifestations improve. (4) A group exists wherein the

relief of the gastro-intestinal tract does not improve the neurosis."

It is correct that an unstable, nervous person presents fertile ground for the development of any functional trouble, but the corollary that all who have functional colon symptoms are unstable or that all irritable colon problems are of psychogenic nature is not borne out by experience.

**MECHANISM OF PRODUCTION.**—The factor which seems to be common to all causes, direct or indirect, is the acceleration of the passage of food through the intestines. This fact is established by the soft, sour stools which these patients frequently have, by x-ray examination and by what is known about the action of cathartics and the result of their continuous use.

The increased irritability then must first exist in the small bowel and result in incomplete digestion and absorption of food. Thus, excessive amounts of incompletely digested food are swept into the colon. Bacterial action then contributes its part in the production of the irritable colon by the fermentation of the undigested food. This results in the excessive production of gas, acids, and other chemical bodies in various amounts. All these substances are irritating to the colon mucous membrane.

The summation of the irritating action of harsh foods, cathartics, and the products of bacterial metabolism results in a hypersensitive mucous membrane. Inasmuch as this membrane acts as the receptor in the myenteric reflex it is logical to expect a correspondingly increased motor response.

This may produce mass contraction with colicky pains, located in the transverse colon or left or right side of the colon. There may be smaller areas of irritation and less severe pain or only a mild degree of disturbance resulting in only a distress of vague character and of variable degree.

To-day it is generally believed that distention of a hollow organ, the lining of which is irritated or inflamed, results in pain. Ryle<sup>2</sup> and others have studied the production of visceral pain; he concludes

that pain resulting from increased tension with stretching of the muscle fibres is felt in the organ so affected. Failure of the muscle to relax (spasm) may be painful, too.

Whether colonic pain of a functional cause is referred according to the somatic distribution is beyond the consideration of this discussion. However, many times, on carefully palpating a tightly cramped descending colon, I have had the patient refer the discomfort to other parts of the abdomen.

The location, character, intensity and duration of the pain vary considerably as cases are compared. This is to be expected when one considers the size, location, and distribution of the colon and recognizes all of the factors influencing its function. And while it is not possible to crystallize the diagnostic criteria into a couplet for convenient reference, it is possible to create a clinical picture which can be recognized by careful analysis and examination.

**THE CLINICAL PICTURE**—The chief complaints are constipation, abdominal distress or pain, and 'gas'. These have endured for months or years and vary in severity, but tend to become more annoying. Cathartics, mineral oil, high roughage diet, or enemas containing soda, soap suds, or other chemicals are being used to correct the constipation. Occasionally, constipation is not a symptom but, on questioning, it is discovered that one or more stools of softer than normal consistency are occurring each day.

The distress may be colicky and be located at or below the navel. It may simulate ulcer discomfort,<sup>3</sup> with the customary relationship to meals. The distress may localize in the right lower quadrant and be mistaken for mild appendicitis. Rather frequently the discomfort is centered in the upper abdomen and quite often approaches a picture of chronic cholecystitis. If an acute attack occurs, especially in an older person who is known to have heart disease, the phenomenon may simulate what has been described as abdominal angina.

It is thus obvious that many true pathological conditions are simulated by the irritable colon. It is equally true that this functional syndrome may coexist and serve to mask real disease.

Inasmuch as the distress of irritable colon is largely of mechanical origin, in-

fluences which alter the dynamics of the gastro intestinal tract also alter the distress. Thus, passage of stool, passage of flatus, the change in gas tension which occurs when noises start rumbling through the abdomen and at times change in position, all tend to relieve, though at times only temporarily, the distress of colonic origin. Belching of gas may also reflexly relieve the distress due to colonic spasm.

An important symptom of the irritable colon is what might be called an abdominal desire for bowel evacuation. Normally one feels the defecation desire as a feeling of fullness and pressure in the rectum. If there is a cramp or other manifestation referred to the abdomen, it is reasonably certain that an irritable colon exists. Without suggesting the reply, one should ask where and how the patient feels the urge to empty the bowel. If one is met with a blank expression, or the patient appears not to understand the question, the examiner may ask: Do you feel it in the rectum or through the abdomen? It is usually not difficult to determine whether the reply is reliable or not.

The consistency of the stool in these cases is almost invariably softer than normal. Obviously this may be the result of the means employed to correct the "constipation," but the result—an acid irritating stool—is the same, whatever the means. This feature of the examination demands special attention. Most people do not know what a normal stool is and few are able to give an accurate, reliable description of their stools. A normal stool should be formed, firm and compact, and more or less banana shape and from 1½ to 2 inches in diameter. The color is of little significance in irritable colon. Because of the difficulties in obtaining reliable observations by the patient, it is much better to inspect a specimen of stool, which the patient brings in a glass jar, to the physician. Almost invariably a soft, gruelly, and mushy mass will be seen. Remnants of undigested food, mucus, and gas bubbles, mutely signifying the fermentation occurring in the colon, can be seen directly through the glass container.

Some idea of the degree of fermentation taking place in the colon can be obtained by ascertaining the amount, frequency, and odor of the flatus expelled per rectum. Normally, gas passes without effort at the time of stool or just before. There should be no abdominal discomfort preceding it.

In hypersensitive colon cases there is marked increase in all of the fermentation phenomena. Some patients will recall that the stool passes as an explosive movement, others will mention the obviously large amount of flatus which they are called upon to expel.

Frequently, the first bowel movement occurs before breakfast. This usually means a rather high degree of colon irritability. Occasionally the urge for bowel movement is sufficient to awaken the patient. These details, brought out in a carefully taken history concerning a patient's bowel habit, reveal existence of a colon usually abused by its solicitous host. The abdominal symptoms are resulting not from the constipation which the patient believes exists, but to the treatment which is being used to correct the constipation. Actually, these patients are not constipated. It is quite the rule to find that their peristaltic response to the stimulation of a diet containing an average amount of cellulose fibre of a bland type is greater than normal.

**PHYSICAL FINDINGS.**—It is of paramount importance to make a careful, painstaking, complete physical examination, although the characteristic physical findings are confined to the abdomen. There is no constant body habitus, no typical constitutional make-up which offers any positive indication that one is dealing with this functional colon derangement. Careful palpation of the abdomen reveals a tender colon. It may be tightly contracted, simulating a firm tube. This observation has resulted in the use of the term "tonic hardening of the colon," by T. Stacey Wilson, of England.

The colon is best felt, employing a rolling type of palpation in the left and right iliac fossae and in the mid-abdomen or just below the navel. The two flexures are not palpable, due to the elevation of the ribs and the deeper position of the colon at these points. The experienced hand soon learns to feel through the abdominal wall and to be insensitive to skin contact. It is actually possible to appreciate the increased tone and thickness of the colon in many of the cases where the abdominal wall is not too thick.

Distention of the abdomen may be a pronounced observation and tympany, naturally keeping in mind the normal location of tympany, may be helpful. One will never see peristaltic waves in this condi-

tion unless the abdominal wall is parchment-like in thickness.

Rectal digital examination reveals nothing characteristic, and proctoscopic studies, as a rule, merely show increase in mucus and some evidence of venous congestion. Conversely, however, an irritated anus or rectum can be the cause of a reflexly irritable colon.

Roentgenologic examination should include the opaque enema and the opaque meal. The enema commonly shows cramping or spasm of the colon. This may be general or rather sharply localized. It is rather common to see the descending colon narrowed throughout its lumen to a pencil thickness. In other cases a good-sized colon will be seen and, as the tension increases, a very rapid cramping occurs beginning perhaps at about the splenic flexure and passing downward forcing before it the colonic content. At times this is sufficiently severe to force the enema back into the container and may be exceedingly painful. I have seen such a mass contraction begin at the hepatic flexure and completely empty the colon distally to this flexure, while the patient complained of abdominal pain which exactly duplicated the distress of the chief complaint. The reproduction of the patient's distress by distention of the colon is a frequent and reliable finding and can be done anywhere. It is not necessary to use the opaque enema on a fluoroscopic table. The findings in the stomach and duodenum are not constant. Some observers<sup>1</sup> have described an increased irritability, but I have not seen this. My findings are, first, that the meal has usually progressed further than normal in the 5-hour interval between the first two examinations, frequently filling the entire colon; and, second, the haustral markings seen in the colon either at the 5-hour or 24-hour screen examination are deeper than normal. Some very excellent roentgenologists take the position that no characteristic can be described as diagnostic of colonic dysfunction. Perhaps this is due to the fact that their patient preparation includes castor oil and irritating enemas. The cramping which they uniformly see they conclude is physiologic. May it not be the result of the purge? At any event a thorough study of these cases should be made to eliminate as completely as possible the existence of organic surgical lesions, and obviously this can be done best by careful roentgenologic examination.

**TREATMENT**—All cathartics must be carefully avoided. In place of the laxative stimulation, normal bowel peristalsis is reestablished by supplying an adequate roughage of a bland nature in the diet. Usually, I recommend the avoidance of potato, peas, corn, lima and baked beans, foods which are unusually high in starch and cellulose, and the interdiction of raw vegetables and raw fruit with the exception of citrus fruit juices.

Nuts, honey, marmalade, popcorn, veal and most sausages are not well tolerated. Drinks to be avoided, in all cases, are beer, gin, buttermilk, and malt preparations. In some cases even milk, tea, coffee, and the less irritating spirits are better avoided. Simple desserts, bearing in mind the avoidance of rich sauces and heavy puddings, are allowed. I make it a practice to specify a definite amount of cooked vegetables and fruit<sup>4</sup> so as to establish an adequate bowel residue. This amount is altered later depending on the character of the stool which results. Cereals and bread, with the exception of those containing whole wheat and bran, are allowed but emphatically the whole grain products cannot be tolerated at all. The leafy or rooty vegetables are usually well borne, especially if thoroughly cooked. Some people find that cabbage, turnips, spinach, and onions are distressing, and when such observations are noted it is best at first to allow the patient to have his way. Cooked fruits, avoiding those with firm seeds, are valuable. They can be obtained everywhere, either as commercial products or as home canned or home cooked fresh fruit. Cooking softens their fibre and lessens their irritating action. People who are not comfortable after eating raw apples can take apple sauce or baked apples without trouble. Beef, lamb, chicken, turkey and fresh fish are usually the meats of choice. These should be well prepared and the fattest part left for others.

By mouth, the drugs of choice are those which directly or indirectly result in quieting bowel cramp. They are belladonna and hyoscyamus, bromides, phenobarbital, and the insoluble heavy alkalis that are not laxative. In the most severe cases opium is helpful in carefully controlled dosage, if used for a short time. External heat applied over the abdomen for 20 minutes especially after eating will be soothing to some. A woolen abdominal band will protect against sudden changes in temperature

and thereby help to prevent a temporary recurrence.

As one watches the progress of the case the opportunity frequently will be found for doing what the physician thinks wise in the way of suggestive therapy. Many times it will be possible to assist the patient to a better understanding of some psychic problem and thereby help him to regain his poise.

Autogenous vaccine occasionally will find a place in the therapy of the most difficult cases.<sup>6</sup> My results, however, have been somewhat disappointing in its use in functional colon cases.

The fundamental requirement in these cases is to obtain as nearly as possible a normal stool. Such a stool must not be so hard as to irritate the anal canal but firm enough to signify a normal rate of passage of food through the bowel above. It may take weeks or months of careful adherence to a strict regimen of diet, rest and sedatives before the desired result is obtained. Some may never attain the ability to handle with comfort an unlimited diet. Practically everyone, however, can have normal bowel activity established and almost invariably this will bring comfort.

The ingenuity of the physician who manages the hypersensitive colon problem will be taxed at times by the likes and dislikes of the patient. Many times an incorrect conclusion that this or that food is the cause of his distress has resulted in a very limited diet. The mechanism of production of his distress must be explained carefully and the confidence of the patient developed in the rationality of the management outlined. Time must be given to explain what a normal stool is, why it is necessary to obtain such a result and why comfort can be expected when the rate of passage of material through the digestive tract approaches the normal. A cooperative patient then is ready to follow instructions accurately.

For the first few days after discontinuing the cathartics, which means, in some cases breaking a habit of several years' duration, the patient may need some assistance in starting the defecation. This is provided by several means. A retention enema of one or two ounces of olive, mineral or cotton seed oil at night will be helpful in some, others will find a glycerin suppository or a two ounce bulbful of warm saline solution in the morning sufficient to start, what to them seems a rather

miraculous phenomenon, but which, after all, is merely the reestablishment of a normal mechanism.

**CONCLUSIONS.**—The irritable colon syndrome is defined and its clinical picture and mechanism of production explained. A broad outline of treatment based on what appears to be the essential factor common to all cases—the obtaining and maintaining of a normal stool—is given. Obviously, various individual approaches to the therapy of these cases may be developed. Careful observation will show, I believe, that when relief is obtained, whatever the means, the stool will closely approach what has been described above as the normal stool.

713 E. GENESEE STREET

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#### DISCUSSION

DR. LEWELLYS F. BARKER, *Baltimore, Md.*: The account of this condition given by Dr. Retan seems to me admirable and there is really very little that anyone can add. The condition he describes is mainly functional rather than organic and is relatively common in persons of nervous constitution, especially when they are underweight.

The condition seems to be associated with hypervagotonic states, that is to say, in patients in whom the innervations going through the craniosacral autonomic nervous system overbalance those that go through the sympathetic system to the bowel.

Dr. Retan has mentioned belladonna and atropine for the relief of spasm of the colon. I might add that I have often seen very good effects following the use of novatropine tablets (1 mg.), one after each meal for a time.

In patients who are very run down and nervous a thorough rest and isolation cure, during which the patient is compelled to gain weight by means of a suitable diet and by injections of a few units of insulin half an hour before each of the two principal meals, may sometimes be very helpful.

If all general practitioners would take to heart what Dr. Retan has told us, there would, I feel sure, be fewer failures in medical treatment and far fewer unnecessary operations, for the removal of the appendix or gallbladder in the types of patients he has described.

I am glad that he called attention to the abuse of colonic irrigations for the treatment of this malady. Formerly many physicians prescribed colonic irrigations as almost a routine measure in such cases. I am glad to note that the practice is being abandoned.

#### LOWEST DEATH RATE ON RECORD

The Bureau of the Census announces that in 1933 in the United States there were 1,342,073 deaths from all causes, representing a mortality of 10.7 per 1,000 estimated population. This is the lowest death rate since the annual collection of mortality statistics was begun in 1900. With the admission of Texas, in 1933, the Bureau is now able for the first time, to publish deaths and death rates complete for the entire population of continental United States.

Of the 18 groups of causes of death into which a table prepared by the Bureau is divided, 11 show decreases in rates as compared with the previous year; 5 show virtually no change, and only one, "diseases of the circulatory system," shows a significant increase. The cause within this group which showed the greatest increase, both in number of deaths and the death rate, is actually the coronary arteries. The increased tone and increased rate of the digestive system many of the cases are lower than that for wall is not too thin.

Distention of the "cancers and other pronounced observed during the past usually keeping in mind, this increase was of tympany, may be receding years, 1932 never see peristaltic wa.

Of the decreases in death rates for 1933 those for the following groups are noteworthy: "Infectious and parasitic diseases," "diseases of the respiratory system," and "diseases of the genito-urinary system." The decrease for the first of these groups is largely accounted for by the drop in the number of deaths from influenza and tuberculosis. In the second group the decrease is attributable mainly to the lower rates for the pneumonias. The decrease for the rate in this group is in keeping with the decline during the last few years in the death rate from "chronic nephritis." The decrease in "diseases of pregnancy, childbirth, and the puerperal state" was approximately the same from 1932 to 1933, as from 1931 to 1932, and is due in large number to the lesser number of deaths from puerperal albuminuria and eclampsia, as well as from puerperal septicemia.

Although the rate for "violent and accidental deaths" was slightly lower in 1933 than in 1932, it will be found that within this group the rates for some of the individual causes, notably "homicide" and "automobile accidents," are higher.

Prior to the issuance of this summary, a table of death rates and deaths by principle causes was compiled for each State in the registration area. Copies of these State summaries are available upon request from the Department of Commerce, Bureau of the Census, Washington, D. C.



# ECZEMA OF INFANCY AND CHILDHOOD

## *Neurodermatitis Disseminata (Type II Eczema), Atopy in Eczema*

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Continued observation and study of the eczemas in infancy and childhood by means of patch tests have convinced us that this method of testing for etiologic agents is certainly of great practical value. We still believe that it is much more important than the scratch method.

Unfortunately, because of the complex nature of this disease and because of the number and variety of the etiologic agents, and above all, because of the great difficulty in carrying out thoroughly and expertly all of the tedious diagnostic measures, it is very difficult to finally eliminate all of the necessary factors to bring about a cure in many of the cases. The approach to the whole problem would be made very much easier if, instead of looking for etiologic agents, a method of changing skin reactivity could be devised. Our experience seems to indicate that for the present there is no short-cut to the solution of this problem.

The present report is based on an analysis of ninety three cases of eczema in infancy and childhood.\* A number of these have been observed for two or three years. Fifty of the patients were discussed in our first paper,<sup>1</sup> many of whom have been followed to the present time so that much more data on their course have been acquired.

### METHODS OF INVESTIGATION

All of the cases were tested by the scratch and patch methods with the list of substances given below. Detailed description of the technic has been given in a previous paper.<sup>1</sup> The list of proteins cited is smaller than those which were actually used in the majority of the cases. It represents a group of test substances which seems to be sufficient for practical use.

#### Test substances †

Wheat ✓	Orris root ✓
Wheat globulin	Pyrethrum
Wheat protease	Kapok ✓

Wheat leukosin	Cotton seed
Egg white ✓	Silk ✓
Egg yolk	Linseed
Lactalbumin	House dust
Goose feathers ✓	Ragweed, short
Chicken feathers	Ragweed, giant
Duck feathers ✓	Timothy
Cheese (American) ✓	Orchard grass
Herring	June grass
Pike	Red oak
Salmon ✓	Brazil nut
Smelts	Red top
Almond	Plantain
Tomato ✓	Horse dander
Sheep wool ✓	Horse serum ✓
Goat hair ✓	Rabbit hair ✓
Cat hair ✓	Cattle hair ✓
Dog hair ✓	

The elimination diets followed were those recommended by Rowe,<sup>2</sup> Hopkins and Keston,<sup>3</sup> and some of our own modifications.

### CLASSIFICATION OF ECZEMAS

In our first communication<sup>1</sup> the true eczemas of infancy and childhood were classified into Types I and II with inter-related forms. Type I may be either wet or dry. In the dry subgroup there is erythema, which is sharply circumscribed and covered by fine scales. The areas of erythema vary in size and shape, and when they become confluent, cover large areas. In this form there are often lichenification and edema. In the wet type, owing to the exudation, there is often a great deal of crust formation. The scalp, neck, and face, and especially the cheeks are practically always affected. When the condition is found on the extremities it is usually the extensor surfaces which are involved. The chief characteristic and primary lesion of this type of eczema is the formation of vesicles. It is this type which has been called by Czerny, Rost, and Keller<sup>4</sup> the early period of the exudative diathesis. The basic lesion of Type II is a skin-colored papule. The papules have a tendency to grouping and as a result there is the formation of plaque-like lichenified, sharply circumscribed, dry, infiltrated areas. The flexor surfaces of the joints,

\* These investigations have been carried out in cooperation with Dr. Gustav Salomon.  
† Arlington Proteins were used (Arlington Chemical Company, Yonkers, N. Y.)

especially the elbows and knees, and the sides of the neck are areas of predilection. This is the type which closely resembles *disseminated neurodermatitis* of the adult.

#### INFANTILE ECZEMA

Twenty-three infants up to one year of age were included in this group. Only 3 patients with a Type II eczema were seen. The significance of this finding will be discussed later.

Thirteen of the cases had positive skin tests. Of these, 9 were positive by patch tests and 10 gave reactions by the scratch tests.

Four of the cases were positive to food proteins by the patch tests; 2 to wheat, 1 to the fish group, and 1 to egg white and egg yolk. It was usual for infants who showed a positive patch test to food proteins to have positive patch tests with inhalants and other substances. It was not until both were removed that an improvement in the eczema was seen.

Eight of the patients had positive patch tests for contact substances. Six of these were positive to the feather group, usually to goose, duck, and chicken feathers, but in some instances only to goose and duck feathers. Goose feathers gave the strongest and most frequent positive test. Of the other 2 cases, one was positive to cattle hair and sheep wool, and one to dog hair.

When the environmental substances which gave the positive patch tests, especially feathers, were removed, there was a definite improvement of the eczema. One of the feather-positive cases has been observed for almost four years and has remained free from eczema for three years after the removal of the feather pillows.

In 3 of the cases there were positive immediate reactions to external substances; one to goose feathers; one to duck feathers (also positive to duck feathers by patch test) and one to orris root, silk, pyrethrum, and *aspergillus niger*.

Nine of the cases showed positive immediate reactions to food proteins, 8 of whom were sensitive by test to egg white and egg yolk. The ninth patient was positive to milk, wheat and radish. Elimination of the addition of eggs to the majority of the positive cases had no effect on the eczema. As has been concluded in the previous paper, the positive scratch test to egg was an index of the eczematous infant or child, but it was nonspecific in so far as the elimination or addition of this protein

had no effect on the course of the eczema in the great majority of the cases.

There was only one case in which the scratch-positive substances seemed to play a rôle in the course of the eczema. The case history follows:

Female, aged 10 months. First seen with Type I eczema on both cheeks. There was a definite history of allergy in the family. The patch tests were negative. Scratch tests with egg white, egg yolk, orris root, silk, pyrethrum, and *aspergillus niger* were positive. This case cleared up completely in the hospital in a very short time. Forty-eight hours after she returned home there was a recurrence. Diet and the elimination of scratch-positive substances was then rigidly observed. For eleven months under this régime she was never quite clear of eczema. It was noted that spinach and oranges increased the eczema. Contact with silk caused exacerbations of the lesions at times only. The eruption then gradually disappeared.

The striking observation in this case was the prompt improvement upon removal from the home, and the recurrence on return. This certainly seems to indicate some environmental contact as an etiologic agent. Since the child was sensitive to *aspergillus niger*, the house dust might have played a rôle. It was very hard to evaluate the rôle of elimination of the scratch-positive foods because of the length of time that it took for the eczema to clear up.

The recurrence after contact with silk was also very difficult to determine definitely because of the unreliability of the flare-up after contact. There is no doubt, however, that diet played a rôle in the eczema.

Hill<sup>6</sup> in a very careful analysis of a large series of infantile eczemas has come to the conclusion that scratch tests are often of value in infantile eczema. Certainly this has not been substantiated in our material. It is striking to note that just as in our series egg white or egg yolk gave the greatest number of positive immediate reactions in his cases. However, he admits that these positive tests have been of little clinical significance. Since in the smaller series of cases there were very few who showed positive immediate reactions to anything but egg white and egg yolk, the difference in the evaluation of the results might be thus explained.

A very striking example of the clinical significance of the patch and scratch tests was furnished by the following case. It was the only one in the infantile group which was sensitive to one of the feather group by both patch and scratch test.

A 10 months old male developed eczema at two months of age, on the chest and trunk. It was vesicular, papular in type (Type I). The family history was negative for allergy. Patch tests with duck feathers and goose feathers as well as wheat were positive. Scratch tests were positive to duck feathers. There was some improvement when the feathers were removed and a rather rigid diet was maintained but there was a constant tendency to recurrence. While the child was under observation, he developed asthma. Feathers could be shown to have an influence on both his eczema and his asthma. When contact with feathers was definitely removed, the recurrences of both became rarer. This case is a rather striking example of the interpretation of the scratch and patch tests. The patch test to feathers explained his eczema, while the scratch test indicated a type of hypersensitivity resulting in asthma.

Elimination diets were given particular attention in this group. In a number of the cases elimination diets suggested food which seemed to play a rôle. It was striking in that most of the cases were not completely cured by the elimination diets, but that there was definite exacerbation on the addition of offending substances. Milk, wheat, and eggs were the chief offenders.

#### ECZEMA AFTER INFANCY

Seventy children from one to twelve and one half years were studied. Twenty-five had been previously reported.

Thirteen of the patients were positive to food proteins by the scratch method, while only 3 were positive to inhalants by this method of testing. Only 3 of the cases gave positive patch tests to food proteins, while 18 gave patch tests with contacts (inhalants), of these, 10 showed a positive reaction to the feather group.

Our experience in this group also has led us to conclude that patch tests with substances other than foods were much more reliable than the scratch method in their practical application in determining the cause of the eczema.

Elimination diets proved very unsatisfactory in this age group in influencing the course of the eczema, irrespective of whether they were based on scratch- or patch positive tests or not. Patients positive to food proteins by patch tests were rare and were usually accompanied by patch positive tests to other environmental substances.

#### NEURODERMATITIS DISSEMINATA (TYPE II)

The eczemas of infancy and childhood have been divided into Types I and II, because the difference clinically has been very

striking. In a previous paper it has been pointed out that those which have been designated as Type II very strongly resembled, clinically, the 'generalized neurodermite' of Brocq, or the "lichen chronicus simplex disseminatus" of Vidal. This is the type which has been named by Rost "Das spatexudative Eczematoid." This form of eczema is characterized by a skin-colored papule as the basic lesion instead of a vesicle as in Type I, and for its predilection for the flexor surfaces of the joints, especially the elbows and knees.

Sulzberger<sup>6</sup> and his coworkers have studied a series of cases of adults with neurodermatitis disseminata and they have stressed not only the clinical differences between this group and the contact or vesicular type of eczema (dermatitis), but they have pointed out that there were other characteristics such as a high incidence of atopy, a positive personal history of allergy, and a great number of immediate reactions rather than patch tests, which were of clinical significance in this group.

It would be important if this point of view could be seen to apply to the eczemas of infancy and childhood (Type II) which resemble adult disseminated neurodermatitis so closely.

Twenty three cases were studied, a number of which have been followed over a period of years.

*Age*—Of the 23 infants studied only 2 showed this type of skin involvement. Yet, of the 22 cases of neurodermatitis disseminata which we are here reporting, 15 gave a history of infantile eczema.

We were able to follow 5 of the cases from infancy through early childhood. In all instances during their first year they presented a typical Type I with vesicle formation which was located on the face, scalp, or extensor surfaces of the arms. The typical Type II localized to the flexors of the elbows and knees usually developed after the second year.

Only 2 cases have been seen with Type II eczema below one year of age, 3 between one and two years of age, 3 between two and three years of age, and all the rest in children over three years of age.

It was evident that a definite change in the reaction of the skin had occurred in the 5 infants who were seen to change from a Type I to a Type II because the recurrences were always primarily papular once the neurodermatitis disseminata had

developed. Therefore, we were not dealing with a chronic lichenified eczema but actually with a primary neurodermatitis. It was not uncommon in the transition period to see a Type I on the face, and a Type II in the flexors of the joints. We think that we have established by the foregoing statistics that in the majority of the cases a Type I usually precedes a Type II. That this is not necessarily always the case was seen from the fact that we had 4 cases in older children, where the primary onset was characterized by a papular eruption in the flexors of the elbows and knees. It is impossible in infancy to predict from the clinical characteristics which of the infants were likely to develop into a Type II.

*History of Allergy.*—Twelve of the 23 cases had an allergic family history. Of the 70 cases with vesicular eczema, only 10 gave a similar history. Since some of the younger individuals which were included among these cases might eventually develop into a Type II, the figure is probably even lower.

*Personal History of Allergy.*—Only 3 of the 22 Type II cases had a personal history of allergy, 2 with asthma and one with hay-fever.

*Tests.*—Thirteen of our cases gave positive reactions by the patch or scratch method. Only one had reactions with both.

*Scratch Tests.*—Seven of the cases gave positive immediate reactions by scratch tests. Two gave a reaction to egg white and egg yolk; one to egg white alone; one to mustard and radish; one to the fish group; one to cat hair and feathers and one, with hay-fever, to orchard and June grass.

*Patch Tests.*—Six of the cases were positive by the patch method; two to goose feathers, chicken feathers and dog hair; one to goose feathers and dog hair; one to flaxseed and egg white; one to wool and one to cattle hair, sheep wool and wheat. It can be seen that just as in our other cases the scratch tests were usually positive for food proteins and the patch tests usually gave reactions with substances other than foods.

Again egg white gave the greatest number of reactions with the scratch tests and animal emanations were most often positive among environmental substances.

*Clinical Course.*—Hospitalization or removal from home environment was of striking benefit in many of the cases irrespective of the diet regulations, which certainly seems to speak for a contact (inhalant) as an important contributing factor. Quite a number of cases, however, could not be controlled as far as the recurrences were concerned in this way. The prognosis for an eventual cure is definitely worse in this group with any method of therapy, as compared to the children showing the Type I eczema.

The elimination of the scratch-positive substances did not prove of very much value in influencing the clinical course. It is realized that the majority of our immediate reactions were due to food proteins and these were of little value in helping us control the course of our eczemas. Sulzberger<sup>6</sup> and others stressed the importance of silk as an etiologic factor. In their cases the hypersensitivity was elicited by intradermal testing, the patch tests with silk were negative. Since no intradermal tests were done, we cannot properly evaluate this finding.

Exacerbations were definitely noted in several instances on eating certain foods but no case was seen that was completely cured, although a few seemed to be improved by very rigid diets.

In our group of patients the scratch test with silk was not positive. Although we were dealing on the whole with poor patients it is hard to conceive that contact with silk was entirely avoided. In this respect, of course, it is important to bear in mind that contact is necessary before an eczema or a sensitivity develops to one of the environmental substances. L. W. Hill<sup>7</sup> tested a number of infants with feathers and was unable to get any positive tests. However, out of the group of 25 infants tested, only .5 slept on feather pillows. In our series all of our feather patch-positive cases slept on feather pillows, either in the bed or in the carriage.

The child sensitive by scratch test to cat hair and feathers improved while in the country. But at home there was a prompt recurrence, even though both of these substances were supposed to be eliminated. Just as in our previous experience with infants, the sensitivity to egg white seemed to be a stigma of an allergic individual rather than a specific indication of an etiologic factor. In only one case with the positive scratch test to egg white in

our series did we get exacerbations of the eczema on eating eggs.

Our results with patch tests in this group have not been nearly so striking as in the Type I. While an improvement was noted in a number of cases when patch-positive substances were removed, especially those sensitive to wool and feathers, the majority of cases with positive tests were not completely cured. This might have been due to the fact that by our method of testing only a few of the allergens which played a rôle were entirely eliminated. Certainly the results in a few of the cases were striking when the patch-positive substances were removed, as compared with the removal of the scratch-positive substances. We believe that the patch tests were more practical because of their reliability. It was rare to see that a positive substance (by patch) seemed to play no rôle in the etiology of the skin eruption.

We agree with Sulzberger that clinically the cases of neurodermatitis disseminata differ from contact eczemas or from the group which has been labeled Type I. We also have found that in the former there is an especially high incidence of a family history of allergy. While only 3 of the cases had a personal history of allergy, there were none among the 70 cases with a Type I eczema. The number of positive patch and scratch tests were about the same as in the Type I group. We have found no proof that the site of the skin reactivity in the neurodermatitis cases was primarily of a different type from that of this group, as far as could be deduced from the evaluation of the skin tests, but it is necessary to stress that we have tested only children, and Sulzberger's cases were youthful adults.

It is clearly evident that patients with neurodermatitis disseminata (Type II) present a primary skin manifestation (the papule) which appears to be different from a contact dermatitis. Even in those cases where a feather sensitivity has been found by patch tests, which has been borne out by the clinical course, the test itself did not reproduce a neurodermatitis but a papular-vesicular eczema. This criticism could just as well be applied to the sensitivity to silk which Sulzberger and his coworkers have found because, obviously, the wheal is also not a reproduction of the disease. To say that reactions of this type, after rubbing and scratching, may give rise to the picture of neurodermatitis is conceivable, but

there is no proof that a primary urticarial reaction finally gives such a picture. However, it has been common experience that lichenified eczema resulting from a primary vesicular skin reaction may result in a clinical picture which is very difficult to differentiate from a primary neurodermatitis.

If we compare the histology of neurodermatitis disseminata with the ordinary vesicular eczema, we find that the basic findings are essentially the same. The changes in both consist of parakeratosis, acanthosis, and edema. Spongiosis (intercellular edema) is usually not found in neurodermatitis. The changes in the chorium are certainly about the same. The difference between the two is quantitative. In neurodermatitis disseminata the intercellular edema is minimum so that we do not get frank vesicular formation as in the Type I eczema. The above seems to the writer to indicate a quantitative rather than a qualitative difference between the two types of skin reactions and speaks more for a common mechanism of pathogenesis. It is of interest to note that the eczema on the face, especially the cheeks, in children with neurodermatitis resembles the Type I eczema rather than that found in the flexors.

A great deal of study is required, of course, to explain why a change in skin reactivity takes place from a Type I into a Type II, and above all why there is this marked tendency to localization in the flexors of the elbows and knees, if the whole skin is sensitive to the allergens.

#### THE HEREDITARY FACTOR IN ECZEMA (ATOPY)

The group of cases to be discussed here were characterized by an allergic family history. Coca\* has designated this factor as the most important and constant link in the atopic group.

Analysis of the 22 cases included in this group indicates that even in infancy there is a tendency for the neurodermatitis type of skin reactivity to appear in the atopic individual. If such an infant manifests his eczema long enough, even though it was originally vesicular in character, it will practically always develop into a neurodermatitis disseminata (Type II) after the third year.

Table I shows that in the atopic group we had 8 individuals with a Type I eczema between one and three years of age, and

4 with a Type II eczema in that age group. There was only one with a Type I (vesicular) eczema after three years as compared with 10 cases with a Type II (neurodermatitis) eczema after three years.

It can be said that while practically all of the atopic individuals eventually develop a neurodermatitis disseminata, only 50 per cent of the neurodermatitis disseminata cases have an atopic family history.

*Patch and Scratch Tests.*—Fourteen of the cases were positive by either patch or scratch tests. The total number of cases giving reactions in this group were not very much greater than in the neurodermatitis disseminata cases, but as will be seen below, the percentages of positive

patch tests were also much higher than in any other group.

Five of our children developed asthma and one had hay-fever. It seems, therefore, that the incidence of personal allergy was highest in this group.

In summing up this group of cases we seem to have individuals who manifest a particular tendency to allergic manifestations. Just as in the neurodermatitis group, there is no evidence that the fundamental mechanism responsible for the skin manifestations differs in any way from that of any other group. The relatively higher number of positive scratch tests would be partly accounted for by the greater incidence of asthma, but even the number giving positive reactions to the contact tests

TABLE I

Eczema	Number of cases	Family history of allergy	Personal history of allergy	Age of onset	Average age observed	Tests	
						Scratch	Patch
Eczema Type I	70	10 (14%)	*No cases after one year of age	Usually infancy	All ages, especially infancy	19 (27%) Usually food protein	20 (27%) Usually environmental substances
Eczema Type II neurodermatitis	23	12 (52%)	3	Usually infancy	Rarely if at all in infancy. Usually after 3 years of age	7 (30%) Usually food protein	6 (26%) Usually environmental substances
Atopic group	22	all	5	Usually infancy	3 Type I between 1 and 3 years 4 Type II between 1 and 3 years 1 Type I after 3 years 10 Type II after 3 years	11 (50%) Usually food protein	9 (43%) Usually environmental substances

\* Only the cases above one year of age were included in this group because it was felt that some of the infants might later develop a Type II eczema.

reactions by patch or scratch tests were very much higher.

Nine of the cases were positive by patch tests and 11 by scratch tests. Six of the cases were positive by patch and scratch; 3 were positive only by patch and 5 only by scratch. One of the cases was positive to silk by patch test.

No particular group of substances were of especial importance in these cases as compared to any other group. Again the scratch tests were usually positive to food proteins and the patch tests for environmental substances.

It is important to note that we had 6 cases which were positive by both patch and scratch tests. This was in contradistinction to only one in the neurodermatitis disseminata cases. The percentage of positives of either scratch or

were increased. It is conceivable that in this group there is a lowered threshold for sensitization which could account for the greater number of positive tests.

#### SUMMARY AND CONCLUSIONS

1. Ninety-three cases of eczema in infancy and childhood have been observed. Of these, 23 were infants and the others varied in age from one to twelve and a half years, the majority being in the younger age groups.

2. The patients were tested by means of scratch and patch tests. In many instances dietary tests, by elimination, were also carried out.

There was an inverse ratio of positive reactions to scratch and patch tests made with food proteins, as compared with the ratio of such reactions to tests made with

environmental substances. Among the food proteins egg white and egg yolk evoked the greatest number of positive reactions, usually only by the scratch tests. Among the contact substances, goose, duck, and chicken feathers elicited the greatest number of positive reactions, usually by the patch tests.

The elimination diets proved of practical value only in the infantile group. Milk was found to be the most frequent etiologic agent by this method of testing.

3. Our experience has led us to conclude that patch tests with environmental substances were much more reliable than the scratch tests in determining the cause of an eczema in children. At least as far as the test substances which we used were concerned.

4. Twenty-three cases with neurodermatitis disseminata were studied. This is the clinical picture which has been referred to as Type II eczema in our previous communication. It is probably synonymous with the generalized neurodermite of Brocq or the lichen chronicus simplex disseminatus of Vidal.

This clinical picture is infrequently seen in infancy. It usually manifests itself after three years of age. In the majority of the cases, however, a vesicular papular eczema (Type I) in infancy and early childhood preceded the neurodermatitis cases. Four cases in older children were seen where the primary onset was a papular eruption in the flexors of the elbows and the knees.

Fifty per cent of the cases in this group gave a family history of allergy as compared with only 14 per cent in children showing a Type I eczema. There is a greater incidence of personal history of allergy in this group as compared to vesicular eczema.

The percentages of patch and scratch tests were about the same as in the Type I cases. Our results with patch tests were not nearly so striking in this group as in the vesicular eczemas. We believe, however, that even in this group the patch tests were more reliable and practical in tracing an etiologic agent than the scratch test.

We have found no proof that the site of the skin reactivity in neurodermatitis disseminata was primarily of a different type from that in Group I, at least as far as could be deduced from the evaluation of the skin tests.

Prognosis as far as the eventual cure is concerned is much poorer in patients with neurodermatitis disseminata than in those with vesicular eczema.

An anatomical factor such as vascular distribution might conceivably be the basis for the localization in neurodermatitis disseminata since the author has observed 2 patients in whom there was the typical localization of the neurodermatitis disseminata plus an eruption limited to the areas of hemangiomas.

5. Individuals with an atopic history show a special tendency to develop a neurodermatitis type of skin reactivity. Of the 22 patients in the atopic group, only one showed a vesicular eczema after three years of age. It can be said that while only 50 per cent of patients showing neurodermatitis disseminata have a family history of allergy, nearly all of the atopic children eventually developed a neurodermatitis disseminata.

The percentages of positive tests by patch and scratch are much higher in the atopic group than in any other group, as is the incidence of personal history of allergy. In the atopic individual we seem to have patients who show a particular tendency to allergic manifestations.

6. The mechanism of the pathogenesis and the seat of the reaction of the eczema in all of the groups discussed in this paper seem fundamentally to be the same. The skin changes are probably brought about for the most part by a reactivity between fixed antibodies in the epidermis and the allergens. There is no evidence in our work that in neurodermatitis disseminata we have a fundamentally different mechanism from that of the vesicular eczemas in that we are dealing with a primary vascular sensitivity in the papillary bodies which is essentially an urticaria. In such a conception the epidermal changes would be purely secondary to the cutis changes and caused by rubbing and scratching.

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## DISCUSSION

DR. A. WALZER: Dr. Peck has adopted the term "infantile eczema" in a rather broad sense, which to my mind, is far from satisfactory. While I do not like to bring up the old question of the nomenclature of eczema, still I think, if the term is to have any clinical significance at all, it might be advisable to limit it sharply to the least number of dermatoses, rather than to extend its meaning to include the diverse clinical dermatological conditions as suggested by Dr. Peck.

Dr. Peck has adopted the views of the German school, that eczema is chiefly dependent on two principals: an "idiosyncrasy of the skin", and a contact of certain exogenous etiological substances; and he applied this conception to the infantile eczemas as well. There is a tendency, in this country especially, to limit the term "infantile eczema" to a narrow group of dermatoses, which are also dependent on two principles. The first is a clinical factor, which demands that the picture must be that of an oozing, vesicular dermatitis; and the second, an immunological factor, which implies a positive personal or familial history of atopy. In other words, in our conception of infantile eczema, we take into account, in addition to the atopy, the type of the skin reaction rather than a diverse conglomeration of etiological factors and pathological mechanisms. When the expression "infantile eczema" is employed, we imply a definite clinical picture which needs no additional descriptive explanation.

Dr. Peck has included the contact dermatoses under the head of infantile eczema. Such dermatoses are not by any means infrequent in infants, and are due, as Dr. Peck has shown, to many contactants, as soaps, feathers, powders, clothes (wool, etc.), and even to the local contacts of certain foods, as vegetables, cereals, etc. (chiefly on the face). While contact dermatoses are also manifestations of hypersensitiveness, they are not atopic and not reaginic. They should not be classed with the infantile eczemas.

Under Type II eczema, Dr. Peck includes disseminated neurodermatitis and especially Besnier's prurigo. In 1892, Besnier described his "prurigo diathesique," which was later named by Rasch "Besnier's prurigo," and is more or less accepted, as a clinical entity by the French. Neurodermatitis disseminata and Besnier's prurigo have their own clinical pictures, and run their own courses, and with very indefinite etiologies, and certainly should not be classed with the eczemas.

Of course, there may be flaws in this conception of the infantile eczemas, just as well as there are objections to the one adopted by Dr. Peck; but, with our immunological knowledge in such an uncertain and indefinite state, it might be advisable, for clinical purposes at least, to limit the eczemas as suggested, rather than extend them.

Another matter relative to this question under discussion is the importance in infants especially, of the scratch and intradermal test, both of which have practically the same significance. Dr. Peck's experience with these tests have been rather poor. Our results with the intradermal tests, on the other hand, have been very satisfactory. How are we to correlate Dr. Peck's experience with ours? I think the answer lies in the proper

evaluation of the positive reaction, especially in infants.

Assuming that the technic and the extracts employed in the tests are satisfactory, a positive reaction in an infant might simply be the result of an irritable skin, which is not rare in infants, and therefore has no diagnostic significance. A positive skin reaction also signifies the presence of certain circulatory antibodies, of which there are two types. One, the precipitin, was originally described by Schloss and his associates. They showed that these precipitins occur in normal and abnormal infants, very often after the ingestion of a new food, especially egg and milk. These antibodies are not pathologic and hence not the cause of the eczema or any other sensitivity. It is probable that these antibodies were responsible for the positive reactions obtained by Dr. Peck with egg, which he could not satisfactorily explain. The other type of antibody responsible for the positive reaction is the reagin, which is present in the atopic infant as a result of heredity. This antibody is pathologic and may be the cause of the eczema.

Having obtained a positive reaction, and excluded an irritable skin factor, how are we to know which type of antibody we are dealing with? Is it the harmless precipitin, or is it the pathologic reagin? The method of distinguishing between the two is by the Prausnitz-Küstner technic. Reagins can be transferred to skin sites on normal subjects, while precipitins cannot. It is by such method of indirect testing that we have been able, not only to check up on our direct reactions, but to obtain a much larger proportion of real positive reactions in our cases of infantile eczema, more than Dr. Peck has been able in his cases.

One fact, however, must not be lost sight of. The mere demonstration of reagins is no proof that the causative factor of the eczema has been found. The symptoms must clear up on the elimination of the atopens giving the positive reactions, before they can be incriminated as the offending factors. If this does not occur, these positive reactions are only important in that they are indications of a potential sensitivity, that is, one that may yet develop at some later date in that infant.

I would like to ask Dr. Peck what procedure he follows when an infant with a suspicious eczema first presents itself. Does he begin his tests immediately? Our approach in a case of an infantile eczematous eruption is as follows. Seeing a case of an eczematous dermatitis for the first time, a complete history is taken and physical examination is done. We immediately institute local treatment, employing daily bandaging, if necessary of the entire trunk, extremities, face and scalp. By this procedure, we hope to control the seborrheic or contact dermatoses, which may simulate the infantile eczema. This local therapy also controls the secondary or superimposed irritative dermatitis of a real eczema. If after a certain period, the improvement ceases to progress, we begin testing, either by the direct, indirect, or very frequently by both methods, still, however, keeping up with the dressings. If the condition clears up without the testing, we wait for possible recurrence before testing is begun. By this method we have been able to control a great many of our cases of infantile eczema.



# THE NEED FOR CONSERVATISM IN THE TREATMENT OF BENIGN UTERINE BLEEDING IN WOMEN UNDER 35 YEARS OF AGE

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In the last few years we have been increasingly impressed by the frequency with which we are consulted by young women who have lost the fundus of the uterus or the physical function of that organ following surgical intervention or treatment with radium or x-ray for benign pathological conditions usually associated with abnormal vaginal bleeding. This situation occurs with sufficient frequency to cause us to feel that either there must be a lack of appreciation among at least a part of the medical profession concerning the less radical forms of treatment and the procedures available for curing myomata uteri, endometrial polypi, and the hormonal bleedings, or that we may be somewhat callous in our attitude toward the importance of conserving the uterus. Therefore, it seems important to reconsider our therapy and to sound a note of conservatism.

What are the causes of uterine bleeding in women under thirty-five years of age that are definitely of benign origin and which should, if possible, be treated conservatively? They group themselves quite naturally into two distinct categories: (1) those associated with recent pregnancy, and (2) those independent of pregnancy. In the former group we encounter

- 1 Retained fetal membranes
- 2 Hydatidiform mole
- 3 Tubal pregnancy
- 4 Pregnancy in one horn of a bicornuate uterus
- 5 A group of entities having to do with abnormal placental conditions, viz., placenta praevia, low implantation of the placenta, and premature separation of the placenta

In the latter group we most often see

- 1 Hemorrhage due to hormonal imbalance such as endometrial hyperplasia, irregular shedding of the endometrium and irregular ripening of the endometrium
- 2 Polypoid changes of the fundal or cervical mucosa
- 3 Myoma or adenomyoma uteri
- 4 Adnexal disease

The causes of benign bleeding associated with recent pregnancy are, we believe, treated for the most part with conservatism and a view toward preserving the child-bearing function. Retained fetal

membranes are removed from the uterus immediately in those who are afebrile, but in the presence of infection the patient is palliated until the inflammatory process subsides, unless the hemorrhage is so profuse as to endanger the patient's life, when the danger of spreading infection becomes secondary and immediate removal of the offending tissues is definitely indicated.

Hydatidiform mole is removed from the uterus, and then the patient is carefully watched for a period of many months for recurrence of bleeding but more particularly by means of the Aschheim-Zondek test to determine whether or not the trophoblast is proliferating or degenerating, as an index of whether we are dealing with benign or malignant sequelae.

Tubal pregnancy and pregnancy in a bicornuate uterus constitute a sufficient menace to the woman so afflicted that frequently surgical intervention is indicated, the former usually early in pregnancy, the latter somewhat nearer term.

The group of conditions associated with placental anomalies is also usually treated according to indication. Low implantations are differentiated from placenta praevia, and the former allowed to follow a spontaneous course. The treatment of placenta praevia is a field in which great difference of opinion exists, but one can say that there is an increasing use of those procedures which aim at a close approximation of normal delivery with the introduction of the Voorhees bag or the Braxton-Hicks maneuver only when necessary, and with less and less resort to cesarean section except perhaps in the primipara with central placenta praevia and a long closed cervix.

Unfortunately, in premature separation of the placenta, particularly when it occurs during labor, we are confronted with the dangers associated with intramuscular hemorrhage, so that we must often resort to abdominal section and anterior hysterotomy. But here again we are conservative, because we do not remove the uterus until its power of contraction has been tried by use of external massage, intravenous pituitrin, etc. When it does contract, it is allowed to remain. On the other hand,

should it fail to do so adequately, particularly when there is the subperitoneal mottled appearance which indicates extensive interstitial bleeding, we do not hesitate to remove the organ.

This short review of the accepted forms of treatment of the various kinds of bleeding associated with pregnancy is convincing in its simple and straightforward conservatism.

Our modern therapeutic trends in the benign pathological conditions of the uterus unassociated with pregnancy are not so conservative and tend much more toward destructive procedures. This statement holds especially for refractory hemorrhage due to hormonal imbalance and that type associated with fibroid tumors of the fundus. The use of radiation and hysterectomy in the treatment of these two groups of patients is, in our opinion, often ill-advised. That these are the methods of choice in some cases cannot be denied; but in many others to which they are now applied they seem unjustifiable, even radical. There are serious objections to the uncritical use of radium, x-ray, and hysterectomy in the treatment of benign conditions of the uterus in young women when employed without sufficient indication, as we have reason to feel is often the case.

We have in mind two recent patients whose stories will serve as illustrations of a great many others. R. V. was 25 years of age and unmarried. Four months prior to her first visit to the New York Hospital she had consulted a physician because she was suffering from profuse menses. A diagnosis of myoma uteri was made, and the patient treated with a series of x-ray exposures through four portals, two front and two back, concentrating on the pelvic organs. These did not effect a cure after four months, consequently the patient sought further medical assistance and came to this hospital. She was found to have a hemoglobin of 58 per cent (Sahli). There was no other abnormality excepting numerous small myomata of the uterus. Unsuccessful efforts were made to learn the dosage of x-ray given by her former physician. She was transfused in the hope that she had not had a sterilizing dosage, and a multiple myomectomy was performed. The menorrhagia has not recurred; but now, six months later, the patient is suffering from severe menopausal symptoms, the latter undoubtedly due to the x-ray treatment. No comment is necessary to indicate what a catastrophe this situation is in the life of the patient, and what a commentary it is on the unwise use of radiation therapy.

Another patient, R. H., 27 years of age, has been married two years but has never been pregnant. One year ago she noticed a tumor of the lower abdomen, and being a trained nurse, sought the advice of one of our leading gynecologists. The diagnosis was myoma uteri. There was no anemia, no abnormal menses, no mechanical

symptoms of any sort. She was advised to have a hysterectomy, the only possible justification for which, from our point of view, being the possibility of future difficulty. A subtotal hysterectomy was performed in a masterly manner; the suspension of the ovaries was carefully done. The uterus contained two subserous myomatous nodules 4 and 6 cm., respectively, in diameter. Laboratory examination revealed that these were the only ones present in the uterus. This patient is now suffering from unmistakable menopausal symptoms. She has not only been deprived of the possibility of having children, which she ardently desired and has never ceased to regret as an impossibility, but has an additional handicap in this passing of ovarian function.

We realize that such ideal cases for myomectomy as these here related are somewhat rare. But what a commentary it is that when they do exist we are so deeply rutted in our stereotyped radicalism that we not only do not recognize them, but worse, do harm beyond our own or nature's power to repair.

The profession is accustomed to a conservative attitude toward acute pelvic inflammatory disease and the frequently associated uterine bleeding, because we have learned that palliative measures are safe and that the ultimate results of this form of treatment are far better than the once common salpingectomy and drainage of the acutely inflamed pelvis. In a similar manner, we have learned to respect ovarian tissue, because the rigors of premature menopause have been brought forcibly to our attention. But despite these lessons with regard to neighboring organs, we have been extremely slow to adopt a similar attitude toward the fundus of the uterus, particularly when the diagnosis is myoma uteri or hyperplasia of the endometrium. Perhaps it is of less moment that we should do so; but that it is of great importance in the first two decades of sex life no one can doubt who comes in contact with any considerable number of women who have had hysterectomy or pelvic radiation before the menopause.

There are several major reasons why we should be slow to remove the uterus. The first is the preservation of normal physiological relationships. Even in the hands of those possessing excellent surgical ability, great care is required to suspend the ovaries so that their hormonal function can be maintained after the lapse of a year or two. In the presence of slight handicaps such as old puerperal inflammatory thickening of the mesovarium, failure is frequent. This is evidenced by the high incidence of premature menopausal symptoms following

hysterectomy This result is usually explained by postulating a disturbed vascular supply to the ovaries

Another reason of major importance is the preservation of the child-bearing function All of us have seen young women lose their uteri because of an offending myoma or two, or have seen the onset of the menopause following radiation of a refractive metropathia hemorrhagica, because those methods seemed to their medical advisors to be the only means at their disposal in dealing with the condition For these patients the whole course of life has been altered upon relatively slight indication, because the medical profession as a whole does not recognize and employ the more moderate means at its disposal for accomplishing a better result

A third reason for conservatism, and one which is urged upon us by the psychiatrist, is the incidence of abnormal psychological states following the loss of the uterus, even though not definitely accompanied by the menopausal syndrome

Historically it is interesting to note, and quite natural, that the earliest and what has come to be the commonest operation for the cure of myomata, should have been supravaginal amputation of the uterus The relation of the blood supply to the cervix forms a natural pedicle which it is logical and convenient to sever For many years removal of the uterus was accompanied by removal of its appendages, the fallopian tubes and the ovaries, and no adequate technique for the suspension of the cervix was known However, the rigors of the precipitate menopause, the prolapse of the vagina with its accompanying organs, stimulated surgeons to devise ingenious methods for preserving the ovaries and of so fixing the cervical stump that vaginal relaxations did not occur Hysterectomy today is a simple and relatively safe operation which yields good results when performed in the presence of adequate indication It is with the application of the operation to the indication that we have come to err on the side of radicalism It is to be hoped that the next step that we as a profession may take in the evolution of our treatment of the benign causes of uterine hemorrhage in the young woman may be one designed to preserve as many of her functions intact as is consistent with her health and wellbeing

Plastic operations for the removal of tumors from the uterus in an attempt to save the organ and restore its normal function

have never been popular As long ago as 1897, W Alexander<sup>1</sup> of Liverpool published a careful account of his methods and results in a considerable series of patients Since that time sporadic attempts have been made both in England and America to bring before surgeons the importance and advantages of myomectomy as contrasted to hysterectomy in selected cases, with very slight response on the part of the profession The reasons for this apathy seem to lie in

1 A lack of appreciation of the importance of conserving the uterus

2 Lack of the fundamental principles of plastic surgery which are necessary to make the operation a success

3 The recurrence of tumor growths following the operation

4 The fear of rupture of uterine scars in subsequent pregnancy

Our newer knowledge of hormonal relationships, as well as our more complete follow-up of patients, is bringing to our attention the necessity of a more conservative attitude toward the body of the uterus in women under thirty-five years of age In the light of recent work upon the subject, it seems possible that there is a physiological balance to be maintained between the endometrium and the ovary, and further, that the complete removal of the former is not necessarily followed by undisturbed function of the ovary The surgical technic necessary to accomplish a good result with myomectomy is at our disposal It has been brought to our attention principally through the work of Victor Bonney<sup>2</sup> of London Various modifications of his technic and some improvements have been added by various workers in this country

The recurrence of tumors is a stumbling block that can only partially be removed However, thoroughness on the part of the operator can accomplish a great deal, as we have learned in our series of cases It is undoubtedly worth while, and we should be content, if we can conserve the uterus even a few years, to allow the young women the opportunity of motherhood and the physiological and psychological advantages of possessing an intact uterus In a surprising number of cases there is found to be no serious recurrence of tumors We must therefore come to the conclusion that it is unjustifiable to assume that if a patient has myomata uteri she will have more tumors if those present are removed A conservative attitude demands that she be given the opportunity to heal the body of

her uterus, if this is at all possible, rather than that it be removed from her. We shall never become expert in the performance and application of myomectomy unless we practice it. We feel that the rarity of its use in our larger clinics may be an indication of a lack of appreciation of its possibilities.

The fear of rupture of uterine scars would seem to have been overemphasized, as Bonney,<sup>2</sup> Waldeyer,<sup>3</sup> and others have published large series of cases in which myomectomy had been performed and subsequent pregnancy and labor normally carried out. It is obvious that a poor union of tissues is a menace in the uterus, whether it follows myomectomy or cesarean section. Sanger taught us how to suture the uterus at cesarean section. Bonney has taught us how to suture the uterus at myomectomy. Both apply sound principles of plastic surgery, avoid dead spaces, prevent hemorrhage and oozing, and accurately coaptate layers of tissue. Just as we have learned that the time-honored dictum "once a cesarean section, always a cesarean section" is unsound, so will we overcome our old phobias concerning myomectomy scars in pregnancy. It is very important, however, that a suitable time-interval elapse between myomectomy and the imposition of the strain that pregnancy is sure to place upon suture lines. Contraceptive measures make this possible with intelligent patients.

With the advent of deep x-ray therapy and the wider distribution of centers where it is available, as well as with the introduction of radium, there has come an increasing use of radiation in the treatment of benign bleeding of the uterus, particularly when myomata and hyperplasia of the endometrium or other hormonal imbalances are the root of the difficulty. It is widely used even in young women. This is more open to criticism than hysterectomy, because at best it is a crude method in the sense that it is not specific. It is impossible even for experts to confine its effect to those parts which are the seat of the immediate difficulty. The work of Pemberton,<sup>4</sup> Ward,<sup>5</sup> Dean,<sup>6</sup> and others illustrate that radium and x-ray therapy are not unmixed blessings, even in women suffering from conditions, such as carcinoma of the cervix, which are sufficiently grave to warrant the use of these agents. Furthermore, they point out that many of the untoward effects appear years after treatment is normally considered complete. It is true that

they refer to women in the cancer-bearing age principally, but Pemberton,<sup>4</sup> Dean,<sup>6</sup> and Phaneuf<sup>7</sup> all refer as well to the use of x-ray and radium in the treatment of uterine fibroids and metropathia haemorrhagica in young women.

We speak of "shrinking" myomatous tumors when we know that highly differentiated connective tissue is most resistant to radiation. We do actually shrink them, because we limit their blood supply by producing an endarteritis of the blood vessels on the one hand, and on the other (and more important), we destroy the hormone-producing elements of the ovaries, which have a growth-stimulating influence. But we not only affect the blood supply of the tumor, or the bleeding endometrium; we affect the whole uterus, parametrium, base of the bladder, and lower bowel. In addition, we remove the hormones of the ovary from the body. A small dose of radium (500 to 750 mg. hrs.) is often recommended as sound therapy in the intractable bleeding of puberty. The x-ray has similar proponents. Yet how often we see patient, having had these "small dosages," who one, two or three years later are suffering from their original complaint or the opposite, amenorrhea, oligomenorrhea, and sterility. Inasmuch as every gynecologist has at his command more moderate therapeutic agents which are effective, we dispute the justification for the widespread use of these more radical forms of therapy. We are aware that these older and less positive forms of therapy require greater patience, a longer period of treatment, and that sometimes the patient seems quite unresponsive; and yet metropathica hemorrhagica is admittedly a self-limited disease. It is impossible to find an instance in which the subject has succumbed to an uncomplicated attack. Therefore, palliation, without introducing a form of therapy which can be of permanent harm, is absolutely indicated.

Are x-ray and radium therapy ever justifiable in young women? Under certain circumstances they certainly are. In individuals who cannot, for whatever reason, undergo laparotomy we should resort to it if the tumors or bleeding points are a real menace to the patient; but then only after palliative methods have failed on prolonged and consistent trial. However, to apply it with relative indiscrimination, as is being done in many centers, simply because this form of treatment gives immediate relief from the ailment or because it

appeals to the imagination of the patient, is so unjustifiable as to border upon the unethical.

The simple methods of therapy, such as hygienic measures, snake venom injections, thyroid therapy, iron ammonium citrate and transfusion, as well as those of good conservative surgery, still have more to offer the majority of women under thirty-five years of age than have hysterectomy and radiation therapy. The profession must accept its responsibility in securing for the patient the greatest good over the greatest possible span of years. Thus we believe will necessitate a decrease in the employment of radiation of the body of the uterus and removal of that organ in young women suffering from bleeding and tumors of benign nature.

Metropathia hemorrhagica, myomata and other benign causes of uterine bleeding in women over forty years of age form an entirely different problem, for the menopause is imminent, the induced climacterium is not so severe, the chances of child-bearing are remote, and the incidence of psychiatric conditions much lower. It is the difference in therapy in the two age groups which we wish to emphasize. In doing so, we hope to induce similar caution and conservatism in our therapy of the benign conditions of the uterine fundus

unassociated with pregnancy such as we have learned is safe and wise in those in which pregnancy is the instigating factor.

#### SUMMARY

An attempt has been made to contrast the conservative therapy commonly used in benign hemorrhage associated with pregnancy, with the radical therapy so often in vogue for the treatment of vaginal bleeding when pregnancy is not a part of the picture. The former is definitely conservative, the latter just as definitely destructive. We feel that there may be justification for the radical point of view in women at or near the menopause. On the contrary, we wish to bespeak for the nonpregnant women under thirty-five years of age more of the consideration and conservative viewpoint which we accord her pregnant sister.

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#### PENCRAFT AS WITCHCRAFT

Science articles intended for newspaper readers must be written more or less on a witchcraft basis," says no less an authority than Austin H. Clark, biologist and member of the staff of the Smithsonian Institute, who has for several years handled the press service of the American Association for the Advancement of Science. "We are prone," he remarks, "to regard ourselves as wholly free from the mental shackles of superstitions that characterize savages and our own ancestors. But," he adds, "while continuing to flatter ourselves with this comfortable belief, let us constantly remember that the human mind has not changed and that all the beliefs that we deprecate in the so called savages and try to forget in relation to our own forebears exist to day in most newspaper readers—and also in us—in more or less modified form."

'Successful publicity for science is based first of all upon the recognition of people for what they are. It is futile to assume that we can make them over into what we would like them to be.'

He also stresses the fact, as he is quoted in *Editor and Publisher*, that the public is interested in personalities and emotions, while scientific men believe at least that they appreciate the world on the basis of determined fact. Every scientific article written for popular consumption, he says, must be tied to some personality. And, 'in addition to being tied to some personality it must have as a keynote—love, hate, gain, loss, mystery, or some other basic emotional concept.' His experience may be useful to those who write or speak on medical subjects for the press or the radio.

#### A TRUCKLOAD OF HEALTH

Health is taken to the rural regions of Maryland in a "Healthmobile," a big truck carrying a complete outfit to set up a children's and infants' clinic wherever it stops. It has a doctor, a dentist, and a public health nurse, facilities for examinations, a junior dental chair, and a moving picture outfit with health films. We are told that last summer seven counties were visited in an eleven week tour covering 1,400 miles. A total

of 89 health conferences were held for the examination of babies and children under school age, 1,589 children being examined, an average of around 30 each day.

The aim of the conferences is to show mothers how to keep their children well. No medical treatment is given, children in need of medical care being referred to their own family physician.

## A PRACTICAL DISCUSSION OF THE IMPORTANCE OF MEDICODENTAL COOPERATION

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The dentist of to-day—and the author does not wish to use the title “dental surgeon” because it is misleading and only too often used to mislead—is trained in the recognition and treatment of diseases of the mouth, jaws and teeth. The majority of dentists are in general practice, while a smaller number devote their practices to dental specialties, on one hand, in the mechanical fields like porcelain, crown, bridge, and plate work; others, practicing periodontia (the treatment of diseases of the gums), orthodontia (the art of regulating teeth), and finally, oral surgery. The oral surgeon is usually expected to be a graduate in medicine also. However, with the marked advance of dental education, the oral surgeon who confines himself to minor oral surgery will after graduation and post-graduate studies be trained well enough to practice his specialty satisfactorily. It is timely to state here that the writer believes in a medically educated dentist and not in a physician practicing dentistry as a specialty, because the degree of M.D. does not give him the medical practical experience, while the modern dental school gives the dentist a medical foundation. Furthermore, if the physician would practice dentistry as a specialty, one must require of him the regular internship in a hospital, at least three years of general medical practice before he could enter the study and practice of dentistry as a specialty.

One often hears physicians remark that they have examined the patient's mouth and that certain teeth should be removed because they carry a gold crown or because a tooth is discolored. Such findings, of course, do not condemn such a tooth because it may be good and serviceable despite its condition. To-day the examination of the mouth is not complete when only using a mouth mirror and an explorer, but must include aside from the ordinary clinical examination an intra- and extra-oral x-ray study including bite-wing films, a vitality test, and transillumination. Such the physician cannot accomplish as he lacks the proper training.

The dentist also believes in the principle of periodic health examination of the

mouth as well as any other part of the body. “In fact, the dentists have appreciated this for more than fifteen years and have created the dental hygienist whose duty it is to subject a patient's teeth to prophylactic treatment and call the dentist's attention to the presence of any pathological condition. The author goes still further and believes that once a complete record of a patient's mouth has been taken by means of x-ray, pulp test and transillumination—aside from the usual clinical records—the so-called bite wing x-ray examination which only shows the crowns and the neck of the teeth should be taken annually and only those teeth completely x-rayed which are devitalized. This x-ray examination in combination with the periodic treatment by the dental hygienist well trained in the recognition of the pathological conditions about the mouth will prevent many conditions, a successful treatment of which at the present time is either difficult or impossible.”\*

To prove the necessity of cooperation between the two professions and their respective specialties, it is important to call attention to individual cases. Vincent's infection of the mouth, for instance, cannot be treated by the physician or rhinologist; even if it also affects the tonsillar region the treatment of the mouth must be left to the dentist or the periodontist because the daily instrumentation of the free gingiva is the most important part of the treatment with which the physician is not familiar.

How unfamiliar the rhinologist and general surgeon is with the removal of a salivary calculus, is shown by the fact that recently one suggested the insertion of ligatures in the floor of the mouth to steady the field of operation, and others, as a rule, suggest the removal of the submaxillary salivary gland when the stone is near the same. The writer has under his observation a fairly large cyst in the left maxilla, which was operated on by a general surgeon a few years ago, who never paid any

\*Theodor Blum: More Common Diseases of the Teeth and Jaws, *Bull. New York Academy of Medicine*, August, 1931.

attention to the teeth which are the causative factors and left in position devitalized teeth which have never been treated. If patients who are suffering with osteomyelitis of the jaws are treated by a general surgeon, pathological fractures and extreme loss of bone is usually the result of their radical procedures.

Although very little is known about tumors of the jaws, the physician is apt to pay less attention to them particularly in the early stages, as the author experienced with a case of a mixed tumor of the salivary gland type of the palate, where the physician insisted on leaving it alone because it did not bother the patient.

While at present the oral surgeon usually acts as the dental consultant, particularly where oral focal infection is considered, this duty will in the near future, with improved dental education, be relegated to the general dental practitioner. At any rate, it should never be a question of instructing one or the other to do this or that, but whatever treatment is outlined for a patient should be based on mutual understanding and be the result of a thorough discussion.

For instance, many times patients present themselves with inflamed gums and while most of these conditions are frequently due to neglected mouth hygiene, they are nevertheless at times oral symptoms of blood dyscrasias, diabetes, etc., in other words, such a case cannot be treated without consultation with the family physician. The conservative operation of root resection should not be performed without ascertaining the state of the patient's general health, so as not to burden impaired health with the retention of a questionable devitalized tooth. The exposure or removal of malposed teeth, the removal of salivary calculi, although as a rule minor operations, should not be performed without getting all necessary information from the physician. In treating the more serious cases of osteomyelitis, Ludwig's angina or tumors, the cooperation of the physician will not only be beneficial to the patient, but also of great assistance to the operator. On account of the close proximity of the maxillary antrum to the mouth and teeth and the often misleading symptoms, a close understanding between the rhinologist and general roentgenologist, and dentist or oral surgeon is quite evident. Many errors which have occurred on both sides have been due to lack of appreciation of the

above. When dealing with the problem of oral focal infection, the cooperation of the two practitioners must determine the necessity of conservative or radical treatment. Although frequently the diagnosis of trifacial neuralgia seems quite clear, the radical and most successful operation of subtotal section of the sensory root of the fifth nerve (Frazier), or even an alcohol injection should not be resorted to under any circumstances without a thorough examination of the mouth, jaws and teeth, so to finally exclude the possibility of an error in diagnosis. At any rate, the treatment of such a condition must be based on the result of a consultation between the neurologist, neurosurgeon, and dentist.

To sum up the writer's particular standpoint, namely, the one of the oral surgeon, "is he justified to operate without consulting the family physician in case of heart, lung, kidney, or other disease in the field of internal medicine? I am personally quite aware of, and have been grateful on many occasions for assistance received from general dental practitioners and dental specialists in dealing with cases requiring root amputation, alveolotomy, surgical prosthesis, and treatment for fractures. No matter how well educated medically the oral surgeon may be, the pediatrician will always prescribe the formula for the feeding of the infant to be operated upon for hare-lip and cleft palate. Ophthalmology when dealing with a possible oral focus, rhinology when in doubt about the etiology of a sinus affection, and otology where there are referred pains, are branches of medicine that assist us in the proper care of our patients. To day the oral surgeon also acts as a diagnostician and, therefore, certain soft tissue lesions of the mouth necessitate an examination of the skin and other mucous membranes by the dermatologist. The general surgeon in case of serious accidents, the brain surgeon in trifacial neuralgia, and even the obstetrician where lesions of the gingiva appear during pregnancy, must be consulted in the interest of our patient. Finally we come to the roentgenologist when we suspect an expression of facial bone lesions in other parts of the skeleton or a metastasis to the lungs or distant regions. The importance of seeking advice and treatment, for our cases, from the specialist in radium and x ray therapy is evident."

\*Theodor Blum. What is Oral Surgery?  
*Jour. Dental Research*, April, 1933

If we now believe in the importance of this cooperation, we must not stop with applying the same to our private practice, but must attempt to establish a similar relation in hospitals. The medical board should insist upon the creation of a complete dental department under the supervision of a general dental practitioner and the appointment of dental internes and hygienists. Only too often a dental specialist, particularly an oral surgeon, is put in charge of the dental department which results in almost entire neglect of the most important branches of dentistry, namely, dental operative (fillings) and prosthetic work. Every patient admitted to the hospital must receive a dental examination and have the findings recorded on a special dental chart.

"The dissemination of knowledge by exchange of thought and experience among oral surgeons and other medical and dental specialists, as well as among general medical and dental practitioners, at frequent conferences, where cases could be presented or reported and discussed freely and honestly by all participants, would practically reach the ideal, if the effort were supported by an institute where not only all types of pathological laboratory exami-

nations could be made, but which would also act as a registry for the collection of material for the further study of any subject in our field. The above refers particularly to conditions about the mouth for which purpose The New York Institute of Clinical Oral Pathology was founded, which is devoted to these principles and holds monthly conferences for the purposes outlined.

In conclusion the author wishes to say that every dentist when examining a new patient should take advantage of this opportunity to refer to the importance of a thorough medical examination and insist for his own benefit as well as that of the patient on a general medical examination before undertaking anything but emergency treatment. The physician, on the other hand, after a thorough study of his patient should stress the importance of the examination and treatment of conditions of the mouth, which on account of his limited dental information he is not in a position to make. Only frequent discussions of the problems confronting the two professions will finally bring about a better understanding of both and better care of the patient.

101 EAST 79TH STREET

### FOOD HANDLERS NO LONGER EXAMINED

Not worth the cost. That seems to be the verdict of the health authorities of New York City on the yearly examination of food handlers, and the examinations have been abolished, except for handlers of milk. As reported in the *A.M.A. Journal*, Dr. John L. Rice, City Health Commissioner, emphasized in a statement that hereafter greater attention would be given to the personal hygiene of food handlers and to the entire matter of food sanitation.

The action, reversing a policy adopted eighteen years ago, was based on two objections. First, it was said that a clean bill of health given to a food handler may have no significance a week later. A second objection arises from the fact that the presence of certain infectious conditions can be determined only by repeated painstaking examinations, which are practically impossible; the cost would be very great and the benefits to the public small. Dr. Rice declared, in that hundreds of thousands of dollars would be spent to discover at most only a few potential spreaders of disease.

It is also pointed out that the health department has more effective measures available for dealing with the possible spread of infection by food handlers. Overreliance on the physical examination of food handlers has brought with it a diminishing emphasis on personal hygiene and matters of general sanitation, Dr. Rice continued. It is proposed now to lay more emphasis on the simple matter of frequent hand-washing and on sterilization of eating and drinking utensils. The Commissioner stated that during 1933

the department had issued 361,289 cards to food handlers, the activity taking up the full time of a considerable number of clerks as well as the time of a physician supervisor. To keep the cards on which the results of examinations are recorded, filing cabinets and valuable space are required.

Altogether the commissioner feels that this is an unprofitable procedure, for the records, he says, have little value. Judged by the criterion of reducing disease and death, the cost of the health examination of food handlers is enormously out of proportion to the returns yielded to the people of the city.

A recent list shows that there are now 139,309 physicians in the United States in active practice. Of these 8,698 are over 69 years old; 3,608 are on the staffs of hospitals; 42,154 are specialists of various kinds, including 12,152 surgeons, 3,501 internists, 3,529 pediatricians, 349 psychiatrists, and 549 public health workers. Of the specialists, 21,644 (51.3 per cent) are in cities of 100,000 population or over, while 35,899 general practitioners (38.3 per cent) serve cities of similar size. The figures also show 65,790 dentists, 8,192 osteopaths, and 5,449 chiropractors.

Doctors who participate in the panel system in England are paid \$2.25 a year for each insured person on their list, and for that sum make as many sick calls as are required during the year. The average number of insured persons on a physician's list is about 1,000.



# THE EARLY RECOGNITION OF PERIPHERAL VENOUS THROMBOSIS

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Sudden death from pulmonary embolism is practically always the result of peripheral venous thrombosis. It is our purpose to discuss the early recognition of the latter in an effort to prevent the former.

Numerous excellent statistics show that peripheral venous thrombosis is very common in surgical and medical conditions, yet probably not diagnosed during life in the majority of the cases. Statistics further show that a marked increase in venous thrombosis not only in surgical but also in medical conditions has occurred in the last decade. The result has necessarily been a tremendous increase in the number of fatal pulmonary emboli. Singer states that in medical conditions pulmonary embolism has increased from 12 to 30 per cent and that fatal pulmonary embolism has increased from 0.13 to 0.65 per cent. Payr states that fatal lung emboli constitutes 57 per cent of all deaths in major surgical operations. We do not believe in quoting a multiplicity of statistics, as these can be of value only in proportion to the diagnostic skill of the reporter and the thoroughness of the postmortem examination.

This great increase in venous thrombosis and pulmonary embolism cannot entirely be attributed to the increasing number of abdominal operations, since a great increase of venous thrombosis and embolism has occurred in medical conditions as well. The predisposing factors are numerous, but in themselves they do not appear sufficient to produce venous thrombosis. A constitutional factor would appear to be most important. It may well be that venous thrombosis is a form of allergic reaction—a reaction of vein endothelium to plasma due to a changed reaction of the organism, a response to abnormal tissue proteins—whether arising in inflammatory tissues, operative wounds, or tissue necrosis, no matter what its cause.

A study of the individuals in whom such thrombosis occurred revealed three very important facts. First, most occurred in the fifth and sixth decades, especially between the ages of 40 and 55, somewhat later in life in the males, but on the whole

more frequently in females. Second, these persons usually possessed a *pyknic habitus*, had a *pasty pallor* to the facies, were inclined toward marked obesity, and showed evidence of increased vagus tone—respiratory irregularity, bradycardia, and dermographism. Others have noted that they were thyroid-resistant in their failure to react with tachycardia to the use of thyroid extract. Third, they were markedly hypotensive to pain, a feature which must be most emphatically stressed. They do not spontaneously complain of pain, and it is only by daily routine questioning and examination that one may elicit the two most important evidences of venous thrombosis—pain and tenderness.

Factors, previously too greatly stressed, are infection and mechanical conditions. Localized inflammation may spread to a vein directly or by the lymphatics as in puerperal, otitic, or anginal thrombophlebitis. The infected thrombi in these latter are secondary to a phlebitis, are frequently parietal in extent, relatively small, particles break off readily and lead to bacteremia and metastatic suppurative foci in the lungs and elsewhere. Chills with high steeple-like rises and sharp descents of fever usually occur. Treatment consists in eradication of the primary focus and exclusion of the involved veins from the circulation. This type of septic thrombophlebitis is not germane to our discussion. That infection plays a minor rôle in the usual type of venous thrombosis is evidenced by the fact that it is no less frequent in clean surgery and medical conditions and occurs more frequently in the presence of nonoperated uterine myomata than in the operated myomata.

That mechanical factors play a rôle in the production of venous thrombosis, especially of the lower extremity, is not to be denied, but the mechanical factor becomes important only in the predisposed. Confinement to bed over a week, whether by operation, infection, or nonsurgical disease, conditions of heart failure, especially when attended by lowered systolic blood pressure or auricular fibrillation, and local conditions of the vein, such as re-

tarded return circulation, phleboscлерosis or varicosity, play their part and give important indications for preventive treatment. The factors favoring thrombosis of the left lower extremity over the right will not be discussed at this time.

Familial predisposition has usually not been sufficiently emphasized. This may depend on hereditary vein conditions, humoral factors or a tendency to allergic response of a peculiar type. In one family, a sister developed thrombosis on three separate occasions following pregnancies or curettage, another sister developed thrombosis following laparotomy for ectopic pregnancy, a brother following an operation for hernia, and a first cousin died of pulmonary embolism ten days after an appendectomy. In another family the patient has had recurrent thrombosis, and three siblings have died of postoperative pulmonary embolism. Schnitzler mentions a mother and two daughters having venous thromboses and pulmonary emboli; he cites another family of three brothers with the same condition.

Variations in site and extent of the venous thrombosis determine its ease of recognition, the tendency to embolization, and the extent. A thrombus completely occluding a vein for a considerable distance, firmly adherent to its walls, involving a vein of small caliber, or firmly attached above and growing toward the periphery will more readily give rise to edema, less readily embolize, and when it does embolize will usually block only a small pulmonary artery branch. It will, therefore, be more readily recognized locally or be less apt to give rise to fatal pulmonary embolism. Such conditions are more usually met in postpartum states, cachexias, medical conditions, and after the injection treatment for varicose veins.

A thrombus only partly attached to the vein wall, of great length, growing centrally, involving a vein of very large diameter such as the saphenous or the femoral, may be less often accompanied by edema, may be readily detached, and when embolism occurs, the embolus is frequently large enough to obstruct the main trunk of the pulmonary artery or one or both of its large branches and cause sudden death. This type of embolism is more apt to occur when no precautions have been taken and at a time when the patient is considered convalescent—sutures removed, patient out of bed, waiting to be taken home or soon after arrival at home.

Fatalities usually reveal a coiled thrombus in the trunk or main branches of the pulmonary artery, and when unrolled, the emboli usually measure over 35 cm. and have a diameter the width of the saphenous vein. One frequently reads in autopsy protocols of fatal cases of pulmonary embolism where examination of the larger veins in the lower extremities proved negative, or the fatal embolism was attributed to thrombosis of pelvic veins. Naturally, a thrombus which now occupies the pulmonary artery can no longer be present at its site of formation. Should the post-mortem investigation be thorough and extended to the smaller veins of the calf and leg, the remnant of the original thrombus, the cause of the fatal embolism, will almost always be uncovered.

From a clinical point of view the following data become highly important: recognition of the predisposing constitution, circulatory and local factors favoring thrombosis, realization that thrombosis usually occurs at the beginning of the second week of confinement to bed, that extensive thrombosis may occur within a few hours, and that lung embolism is especially frequent about the tenth or eleventh day. It therefore follows that the early recognition of venous thrombosis is of prime importance.

FEVER.—The presence of fever in a postoperative or medical condition is usually in itself of no diagnostic value, because other causes for fever may be difficult of exclusion. Venous thrombosis without phlebitis may per se give no fever. Any slight fever in the postoperative state without assignable cause, particularly at the postoperative site, even in the absence of pain in the lower extremities should be cause for suspicion. The temperature is usually subfebrile, transient, and unnoticed. The fever in thrombosis, without phlebitis occurring later, is probably due to minute broken down thrombus particles thrown into the blood stream. When secondary infection of the thrombus occurs, the fever becomes continuous; when accompanied by so-called septic thrombophlebitis with purulent clot, an irregular septic fever occurs, frequently with chills, and steeple-like rises and sharp descents. Later on, fever may be due to lung infarction, bland or infected. On the whole, fever is of very little diagnostic value in the average case of bland thrombosis, as complications which may in themselves cause fever are frequently present.

**PULSE INCREASE**—Pulse increase may be absent. When present it is frequently of no value, as it can be assigned to some other cause than venous thrombosis.

**PAIN**—Pain in the groin, thigh, calf, below the inner malleolus, or in the sole of the foot is of great importance when complained of in any bedridden case, medical or surgical, especially if accompanied by fever not otherwise explained. Usually the patient is naturally hypersensitive or made so by the use of sedatives or narcotics, and the complaint is not made and must be elicited by close daily questioning during that period when venous thrombosis usually sets in.

A man, aged 52, was operated upon for direct inguinal hernia. Two weeks later he suddenly complained of severe pain in the epigastrium. His skin was pale, cold, and clammy. Physical examination of the chest and abdomen was negative except for slightly diminished intensity of the heart sounds. The clinical picture suggested coronary closure. The temperature rose to 100° F. The next day, a few crepitant rales over the right posterior chest and marked tenderness in the right calf were noted. Upon questioning, the patient admitted having felt pain in his right leg two days prior to the attack, but did not think it sufficiently severe or important enough to mention. The lower extremities were immobilized; edema developed and subsided in two weeks without further recurrence of embolic manifestations. Fortunately, the embolus was small. Embolization might have been avoided had the patient either complained of his pain or been questioned for it.

**EDEMA**—Occasionally edema of very slight extent, due to venous obstruction, may be noted on the dorsum of the foot or over the shin. When marked it is usually late, signifies extensive and complete plugging, and carries with it relatively less danger of embolization.

**VEIN TENDERNES**—Vein tenderness is the most important physical sign for early diagnosis before pulmonary embolization occurs. Routine daily examination of the lower extremities of all patients confined to bed, whether for surgical, traumatic, or medical states, is absolutely necessary. Its significance and evaluation will be all the simpler if started the first day the patient is confined to bed: gentle, deep, one-finger palpation perpendicularly to the axis of the vein investigated, over the entire extent of the femoral, internal saphenous, tibial and plantar veins, that is, inner groin, inner thigh, popliteal space, calf, preastragalar and plantar areas. This tenderness is not

over the periosteum, ligaments, or muscle, the latter being excluded by absence of tenderness on bilateral pressure over the muscle mass.

A man, aged 52, was operated upon for a perforated gangrenous appendix. The fever promptly subsided. On the eighth postoperative day he suddenly complained of pain in the left side of the chest anteriorly, was very dyspneic, cold, sweaty, but no cough, expectoration, or cyanosis. This was diagnosed as a coronary closure. The next morning he expectorated some blood tinged sputum, friction rub and rales were found in the left axilla, and marked tenderness was elicited over the left calf. Pain and edema of the lower extremities were absent. Oxygen tent and immobilization of the lower extremities were immediately instituted. Subsequently marked edema of the entire left leg appeared confirming the diagnosis of pulmonary embolism from a thrombus in the left lower extremity.

A man aged 50, was admitted with a seven-day history of influenza, one day loss of power in both legs and difficulty of urination. Examination revealed a pyknic habitus, hypersensitivity, paresis of both lower and right upper extremities. Tenderness in the right calf was attributed to his general condition, and his attendants diagnosed postinfluenzal myelitis. Several days later, while on a bedpan, he suddenly collapsed and died. Postmortem examination showed transverse myelitis and occlusion of the bifurcation of the pulmonary artery by a saddle thrombus which when uncoiled equalled the length of the right popliteal and femoral veins. The remnant of the thrombus was present in the right posterior tibial vein.

**MINOR PULMONARY EMBOLI**—Minor pulmonary emboli may thus give the first clue to a preexisting venous thrombosis. These individuals are in the same age group in which coronary artery disease is so frequent and differential diagnosis may at times be difficult. The sudden onset of chest pain may be the first indication of pulmonary artery obstruction, or the pain may be present in the upper abdomen or epigastrium, and when accompanied by nausea or vomiting or persistent belching, lead to an erroneous diagnosis of mesenteric vessel closure, intestinal obstruction, or subphrenic space infection.

The clinical features of pulmonary embolism vary with the size of the obstructed pulmonary artery, severity of preceding heart weakness, and passive congestion of the lungs. The onset of symptoms while usually sudden, may occasionally be insidious and of slow evolution. In the severest cases death may be instantaneous or within a few hours. Shock is attended by cold clammy sweat and extremities, pulselessness, anxious facies, and marked drop in systolic blood pressure. These cases are erroneously diagnosed as

coronary closure. Manifestations of heart failure may occur where death is delayed a few hours to days.

We are here especially concerned with the minor embolizations, in which event bland hemorrhagic infarction of the lung follows where there has been antecedent left heart weakness and passive congestion of the lungs. Detailed description of hemorrhagic infarction will not be attempted here. Pain in the chest varies in degree and location. It may be precordial, retrosternal, posterior, or in the shoulder. In the hyposensitive patient, pain may be replaced by palpitation, vertigo, weakness, anxiety, or sweat. Fleeting dyspnea may be the first sign of embolization. Cough is usually delayed several hours. Hemoptysis of bright red blood is significant, occurs in relatively few cases, may be very marked, and no other signs or symptoms may be present. Leukocytosis follows. Fever also occurs late; the rise is usually step-like reaching its maximum in a few days, and gradually falling, particularly with improvement of the circulation by the use of digitalis.

Too thorough a physical examination of the chest should not be attempted as there is great danger of further embolization by moving the patient about. The physical signs when present are due to bland hemorrhagic infarction and occur more frequently at the bases especially the right lower. Occasionally the infarcts are multiple and bilateral. Any atypical signs in the chest occurring one or two days after suggestive symptoms of pulmonary embolization are suspicious of infarction. Dullness may be marked and localized, fine râles, friction rub, markedly diminished breath sound, bronchial breathing, may each or all occur. Erroneous diagnoses of pleurisy or pneumonia are not uncommon. X-ray examination has not proven of great value and is dangerous because of the entailed motion to the patient, even with the use of a portable apparatus.

Neurological symptoms, such as sudden syncope after exertion, are suspicious and are due to the resulting cerebral anemia. These are much more frequent in the presence of cerebral arteriosclerosis usually associated with advanced age and hypertension. These cerebral symptoms may lead to an erroneous diagnosis of cerebral hemorrhage or embolism.

The prognosis of the individual embolic attack will therefore depend on the size of

the embolus, disintegration of the embolus, age of the patient, elasticity of the pulmonary arteries (in the young, allowing blood to pass the clot), and good heart action. It cannot be sufficiently stressed that the slightest suspicion of pulmonary embolism, no matter how small, warns of the possible danger of a later massive fatal attack and must not go unheeded.

The prevention of fatal pulmonary embolism requires not only the prevention and recognition of early venous thrombosis, but, once venous thrombosis has occurred, taking all precautions to avoid embolization, and once minor embolization has occurred, to leave no step unturned to avoid massive embolization. Factors favoring dislodgment of the venous thrombus are mechanical jarring, straining at stool, sudden sitting up, transportation, and bandaging or massage of the involved lower extremities. Other factors as yet little understood are the suction action of the right heart, venous pressure, changes in the thrombus itself, and changes in the vein wall, any of which may operate while the patient is lying quietly in bed or even sleeping.

We do not wish at this time to discuss the various preventive measures for thrombosis or embolism or treatment when these conditions occur, except to mention that once thrombosis has occurred, the greatest care of the bowels and in the use of the bedpan, as well as complete immobilization of the lower extremities by means of properly adjusted sand bags at their sides and over the knees and ankles are vital. We believe that surgeons should be thoroughly schooled in the technic of doing the modified Trendelenburg-Meyer operation for massive pulmonary embolization, having everything in readiness so as to operate at a moment's notice when it appears that the patient's condition without this operation is otherwise hopeless.

#### CONCLUSIONS

1. Fatal pulmonary embolism is most frequently caused by peripheral venous thrombosis of the lower extremities.

2. A certain type of individual is apparently constitutionally predisposed to this complication.

3. Allergic factors, as yet insufficiently understood, may play a rôle in the production of venous thrombosis.

4. Individuals confined to bed for any reason whatsoever should be daily ques-

tioned for pain and daily tested for tenderness of veins of the lower extremities, especially during the second week of their stay in bed.

5. Early diagnosis of venous thrombosis of the lower extremities should be followed by prompt and complete immobilization to prevent fatal embolization.

6. The presence of sudden chest symptoms or signs occurring in the predisposed individual should lead to immediate investigation for evidences of peripheral thrombosis, and proper precautions should be taken.

651 ST. MARKS AVENUE

## CASE REPORT

### SUDDEN DEATH FOLLOWING THE THERAPEUTIC USE OF SODIUM SALICYLATE

NORMAN STRAUSS, M.D., F.A.C.P., JULIUS ROSENTHAL, M.D.,  
and  
MICHAEL A. NOCERO, M.D.

*From the Medical and Pathological Departments of the Morrisania Hospital, New York City*

Fatalities from the therapeutic use of sodium salicylate in rheumatic fever are so infrequent that we feel this case deserves to be recorded.

W. K., age 40, born in Greece, was admitted to Morrisania Hospital at 4 P. M. on April 24, 1934. His complaint was pain and migratory swelling of all joints which had lasted three months. There had been about one year and a half previously an attack of joint pains limited to the lower extremities and lasting only a week, but there was no record of childhood pains or repeated sore throats. There had been no venereal disease. Six weeks prior to onset of the present illness he had a stubborn "cold" and cough.

*Examination.*—showed temperature 100.4° F., pulse 112, respiration 24. Pupils were miosis but reacted to light and accommodation. The tongue was coated, the teeth were in poor condition, the pharynx was markedly reddened, there was a postnasal drip, all the joints were red, swollen, warm, tender, and painful on motion. The right ankle and shoulders seemed most acutely involved. Both tonsils were reddened and enlarged, but no pus could be expressed. The heart gave no signs of rheumatic involvement. The lungs were clear, the abdomen negative except for appendectomy scar.

*Diagnosis.*—The patient appeared to have typical rheumatic fever with an upper respiratory infection.

*Treatment* included rest in bed, application of methyl salicylate and cotton to joints, a cradle with electric light bulbs over lower extremities, a single dose of 20 gr. each of sodium salicylate and sodium bicarbonate was given on admission.

*Course.*—At 10:30 A.M. the next day, 4-25-34, following a cleansing enema 120 gr.

of sodium salicylate in starch water was given rectally. No untoward effect from this dose was seen; in fact, the man said that he felt better.

At 6:30 P.M. a second dose of 120 gr. of sodium salicylate was administered per rectum.

That evening the patient vomited. He was given 30 gr. of sodium bicarbonate. He slept well that night.

At 6:00 A.M. next day, 4-26-34, he complained of nausea, tinnitus, and then became aphonic and perspired profusely. At 10 A.M. he was markedly prostrated, unable to talk, semi-comatose. He was given an enema in the effort to wash out any unabsorbed salicylate. Adrenalin, 15 minims, q. h., was given. At 3 P.M. he went into acute collapse and expired at 3:12 P.M. despite intranasal oxygen, coramine, and alpha lobelin injections.

*Postmortem Findings.*—The general appearance of the body is that of a well-built middle-aged man. No abnormalities of skin or joints externally and no edema.

Scalp, skull and dura show no abnormalities. The subarachnoid space contains a normal quantity of free fluid. On section of the brain, there are no hemorrhages or areas of softening.

There is no free fluid in either pleural cavity. There are a few band-like adhesions at the base. Scattered throughout both lungs there are subpleural hemorrhages of varying sizes which on section are seen to extend into the lung parenchyma for varying distances. The lungs themselves are moderately congested; show no evidence of consolidation. The pulmonary arteries show no evidences of embolization.

The heart was apparently not enlarged; its weight was 320 gm., its contours were normal. The pericardial cavity contained about 75 c.c. of straw-colored fluid. The

parietal pericardium showed no abnormalities. The visceral pericardium showed a few small hemorrhages, located mainly on the posterior aspect of the right ventricle. The right auricle was somewhat dilated. The left auricle was of usual size. The myocardium was of a brown color. There were no scars, no infarcts, and no nodules of any kind seen. In the septum, just beneath the endocardium and below the middle cusp of the aortic valve, there could be seen an area of ecchymosis about 1.5 cm. in diameter. The valves showed no evidence of previous disease. Careful examination of the mitral valve, particularly, did not reveal any evidence of previous or existing pathology.

In the liver there were a few small hemorrhages under the capsule. There was congestion of the sinusoids. The parenchyma was pale. The gallbladder was normal.

The spleen was enlarged; its weight was 350 gm.; its color was deep purple. At the upper pole could be seen a small area of hemorrhage.

The kidneys were acutely congested. No hemorrhages or infarcts were seen. The pancreas and adrenals were normal.

The stomach showed a hemorrhagic gastritis with numerous submucous petechiae. Rectum and colon were negative.

Bladder and prostate were normal.

**Anatomical Diagnosis.**—Subserous hemorrhages of lungs, heart, and kidneys, hemorrhage into spleen, subendocardial hemorrhage, hemorrhagic gastritis, mild parenchymatous degeneration of kidneys and liver.

**Chemical Findings.**—Chemical examination of kidneys and liver showed these organs to contain a large amount of salicylates. Examination of the heart muscle proved unsatisfactory.

#### COMMENT

One of us (Strauss) has had a large experience with the use of this drug in the treatment of rheumatic fever with the following technic: After a low cleansing enema, 120 gr. of sodium salicylate in starch water is given twice a day for the first day; 60

gr. twice a day the second day, and 30 gr. twice a day the third day, a total of 240 gr. on the first day, 360 in two days, 420 in three days. Almost dramatic results follow, symptoms subside abruptly, swelling of the joints diminishes, pain on motion disappears, and the temperature drops to normal.

Heyn<sup>2</sup> published his experiences with 122 cases of rectal administration of sodium salicylate with equally good results. He states the adult dose consists of 8 to 10 gm. (120 to 150 gr.) of sodium salicylate dissolved in 120 to 180 c.c. of starch water.

In 1927, Hanzlick<sup>1</sup> said: "In general it may be said that the fatal dose of sodium salicylate is from 1 to 1.5 gm. per kilogram for all species irrespective of the method of administration; the fatal dose of sodium salicylate in man is not definitely known, but may be somewhat less than, or about 1 gm. per kilo."

Our patient weighed about 50 kilograms. According to this calculation our dosage was well within the margin of safety as our patient only received 17.4 gm. (260 gr.) in 36 hours.

This patient did not die an allergic death. He died as a result of the toxic effect of sodium salicylate as evidenced by the clinical picture of (1) nausea, (2) vomiting, (3) cerebral changes (loss of speech), (4) profuse sweating, (5) collapse, (6) death, (7) the characteristic postmortem changes described. This clinical picture likewise has been described by other observers.

Our troubled souls are, fortunately, eased by Stedman who placed the word "idiosyncrasy" into the medical dictionary with the following definition: "A susceptibility, peculiar to the individual, to the action of certain drugs." This patient, we believe, died as a result of an idiosyncrasy to sodium salicylate.

2701 GRAND CONCOURSE

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} observers quoted by  
Hanzlick in 1.

#### NEW FRENCH HEALTH "RACKET"

Under French law a soldier who is declared by the army physicians to be in perfect health on arrival at the barracks and who later develops tuberculosis or other disease, is assumed to have contracted the disease during his military service, and is entitled not only to an immediate discharge from the army, but also to a pension for the rest of his life. As a result, says the Paris correspondent of the *A.M.A. Journal*, the recruits have reversed their tactics. Formerly it was common for some to simulate deafness, excessive myopia,

or dysentery in order to be relieved of military service. Since the enactment of the new law the reverse is true. Now the simulators seek to conceal any disease with which they are afflicted in order not to reveal it until after two examinations have been completed, so that their disease may be declared to be a consequence of military service and give them the right to a pension. The physicians take great precaution to detect all fraudulent practices, most of which are well known to them.

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## EDITORIALS

### Dr. Bedell's Address in Peekskill

In his address before the First District Branch, Dr Arthur J Bedell, the President of the Society, spoke pertinent words. His address is published in full elsewhere in our columns.

Dr Bedell is to be commended for bringing into the open the tactics of the opponents of organized medicine. Too long has the profession been the target for everyone who had a hobby to ride, a theory to propagate, or a reform to endorse. Instead of squarely standing upon the issues raised, it seems that the technic requires that the profession must first be besmirched. Thus, for example are the tactics employed by the State Commissioner of Health who is advocating compulsory health insurance and to accomplish that end, sends out a letter to the mayors of ten cities and the supervisors of ten counties pointing to the high infant mortality in the districts in question. To a layman the implication, of course, is that the physician and health services in these communities are at fault. The fact that one cannot use such infant mortality figures as a yard stick to measure either medical or health agency efficiency is shown

by the Statistical Report of Infant Mortality for 1933 in 985 Cities of the United States, published by the American Child Health Association.

In an address last June before the Cornell University Medical College, Dr Parran, again prophesying the early advent of socialized medicine yielded to the impulse to make the wish father to the thought. He then asserted that fifty thousand persons in New York State die annually for lack of proper medical care. It is to be feared that he was then performing some statistical *leger de main* to lend support to his views. Individuals who attempt to cure cancer with rattlesnake oil or diphtheria with absent treatment or appendicitis with a diet of raw fruits and nuts, will die whether medicine is socialized or not. As for the small percentage of cases where physicians rendered improper treatment, there will not be one hundred per cent competence in any field of endeavor under any system. The element of error will persist in all activity while the race retains its human attributes. It is more apt to exist in medicine under the stultifying conditions imposed on the doctor by compulsory health insurance than under the competitive stimulus of private practice.

If, on the other hand, Dr Parran wishes to imply that thousands of people die annually in this state although they apply for medical care and are refused, then it appears that state medicine insofar as it already exists has failed to function properly.

The releases of the Milbank Foundation, instead of standing squarely upon the issues raised by their studies, announce speeches by Mr Kingsbury, with flings at the "reactionary" and "obstructionist" attitude of the organized profession.

Dr Bedell points out the injustice of this, and urges that we take our place as Master in the House of Medicine.

If we must discuss changes in medical practice, let us at least stick to the mooted questions raised. Guerilla warfare and sniping at the medical profession hardly create the proper atmosphere wherein profit can be derived from studied discussion.

## The Old Doctor and the New

It seems a strange thing that the superbly equipped physician and surgeon of to-day should require any defense against the charge that he is not as good as the "old family doctor" of days gone by. Yet we find in *The Scotsman* a statement by Dr. William Robertson that the present-day medical student is better educated than his predecessor of thirty or forty years ago, but he is not a better healer! This would not be worth noticing, perhaps, if it were not for the fact that popular affection for the old-time medical man has glorified him into a legendary and mythical figure. He is regarded almost as a miracle worker.

It may be worth a few moments of our time to explore the change of feeling that made the old doctor a demi-god and makes the new doctor merely an everyday human being. In the first place, we must recognize that the change in the popular attitude toward disease has been little short of revolutionary. In our grandfather's day many thought of illness as a visitation of an inscrutable providence, and a doctor who could enter the sick-room, take the pulse and temperature, and tell what was wrong, as clearly having something of supernatural powers. If the patient died, it was the will of heaven; if he recovered, the doctor had snatched him from the jaws of death.

The doctor, too, was not surrounded with instruments for testing this and that, he did not resort to laboratory examinations and reports, he did not send the patient to various specialists or call them in for consultation. In short, he seemed to personify in himself all the medical wisdom of the ages, and his patients set him up on a pedestal where he still seems to look down with a benign smile at our more fussy, if more scientific, procedures of to-day. Popular sentiment, or sentimentality, failed to realize that the old physician often did not know what was wrong with the patient. The affection might be called "inflammation of the bowels," hot or cold applications might be prescribed, and the outcome left to the will of fate, the sick man's lucky stars, or the strength of his constitution.

Now the young doctor, instead of entering practice after graduation, spends years in hospital work and learns that disease is no such simple matter as the "old family doctor" thought. He knows he must face cases of great complexity and difficulty and must try to solve problems that his predecessor did not even know existed. Hence he inevitably approaches his cases with more humility and may have less air of authority than the doctor of former times.

Yet this very fact proves him the better doctor, the more thorough-going scientist and diagnostician. His reliance on instruments, laboratories, specialists, etc., may prove to old Mrs. A. that he "doesn't know everything," but it proves to every sensible person that he is marshaling the wisdom of all medical science in a way that was impossible a generation ago. Again, as pointed out by a western Professor of Surgery, Dr. Russell Best, the doctor's instruments are merely extensions of his natural powers of observation. The older physician would himself have welcomed the newer equipment.

The popular glorification of the old family doctor also takes another turn. This grand old character used to bring all his wisdom to the bedside for a dollar a visit, and some people are unable to see why the modern practitioner cannot do the same. The high cost of modern medical education and training, the expenses of equipping and maintaining an office, mean nothing to them. They can understand why a modern automobile costs more than a horse and buggy, why a radio costs more than a mouth-organ, why an electric refrigerator costs more than an ice-box, but they cannot see why modern medical science should cost any more than the old-time régime of pills and plasters.

There, perhaps, we have the reason why welfare agitators are able to play skillfully on this feeling and persuade so many that a political socialization of medicine will give them all the benefits of modern science at the same rate their grandfathers paid for the "old family doctor." Well, the "new family doctor" knows it is impossible. Someone must suffer. In the first analysis, no doubt, it will be the



doctor, but in the last analysis it will be the patient. Let us hope the country will wake up to this fact before it is too late.

### The Origin of Criticism

The origin of much of the criticism against the present system of medical practice comes mostly from two groups, the so-called philanthropic foundations and the State Board of Health.

The State Board of Health would extend preventive medicine. No one objects to this, but after all preventive medicine is strictly limited to such prophylactics and other preventives of disease which medical science has won. No act of legislature can extend prevention and institute protective measures where none are known to exist.

The activities of the numerous non-medical foundation workers who with the great wealth behind them set out to make studies and then, to enhance their importance to their employers, become political protagonists for the general adoption by legislation of the results of their studies, are another source of criticism of the medical profession. It were as if any scientific worker in medicine instead of publishing his studies and results, were ever afterward to agitate for its adoption by the profession instead of letting "truth find its way," which it has a habit of doing.

Has it never struck anyone that there exists a total absence of complaint from

the public which next to the profession is the most concerned in the matters at stake? Neither the public, the lay press, nor widely scattered communities have registered any public protest. Instead of this we see interested foundations activating publicity, encouraging discussion, even soliciting meetings to stir up and arouse an apparently apathetic public and its press to urge change in medical practice.

In these strenuous times, all this has at last succeeded in bringing some medical groups into being, who, more concerned with the economic status of the underpaid doctor than anything else, are working to better his status, and to secure their end they would accept even health insurance or anything else that would give these physicians adequate incomes. With their point of view we can have no quarrel, but we can hardly take the same stand, for we are concerned first with the quality of service the public gets, and next with the ultimate destiny of the medical profession. Change per se is unopposed by us. To meet conditions as we know them, we are ready to study any plans or procedure which is rational and practical.

The ten-point program of the A.M.A. provides a sufficiently broad frame within which we can all work toward a solution, and the first step toward that solution is to understand the necessities of the situation. Unwarranted criticism of the profession is hardly a reason to open the discussion.

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### DR. HOLT'S BOOK NEARING A MILLION

A forty-year-old book that is still going strong is Dr. L. Emmett Holt's "Care and Feeding of Children," which has sold 800,000 copies and is now published in its fifteenth edition. It is figured that every copy is read by at least five mothers and discussed by twenty. How did it get this extraordinary distinction, asks Harry Hanson in his book column in the *New York World Telegram*. As he sees it, it was because Dr. Holt "discussed the care of children in the simplest terms so that every mother could understand it. Besides, he wrote advice that was meant to keep the child well. He did not alarm the mother with a parade of symptoms and a list of preposterous precautions. He did not tell

anecdotes of all the terrible cases he has observed as a physician. He took for granted that the young mother wanted to know how to feed, clothe, and train her infant and keep him healthy and gaining. And because he had a fund of simple words he put it into the English language, forgetting Latin, Greek, and the passwords of the doctor." Mr. Hanson writes entertainingly, but should remember that thousands of doctors are telling mothers every day how to care for their babies, without using Latin, Greek, or "passwords," or frightening them with "preposterous precautions" or "anecdotes of terrible cases." Book reviewers, too, sometimes have a patter that is almost alarming.

# News

*of Interest to the Profession*

## ADDRESS BY DR. JOHN WYCKOFF

*Delivered at the Laying of the Cornerstone of the Baruch Laboratory at Saratoga Springs, on September 14, 1934*

MR. GOVERNOR, MR. NOYES, MEMBERS OF THE COMMISSION, GUESTS, LADIES, AND GENTLEMEN:

It is an honor to have been requested to speak here to-day at the laying of the cornerstone of the Research Building of the Saratoga Springs. The very fact that the opening of a building for research is considered by the Commission an important occasion, at which the distinguished Governor of the State is present, is in itself an indication of the importance in which the search for the truth in the development of a great institution for the public health has been held by the Commission in its planning.

Viewing these buildings, the people should realize the wisdom of the Commission, appointed by the Governor and supported by the legislature, in seeking the best advice available. The quality of the aid which the Commission sought is beyond criticism. Dr. McClellan, the executive director, of unquestioned scientific attainment, was given the opportunity to increase his already wide experience in scientific institutions by making a particular study of research laboratories associated with health resorts in various parts of Europe. Professor Groedel, one of the great authorities in balneology, himself an investigator of note, was made the official consultant in the development of the enterprise, and the Commission with its consultants has constantly conferred with the leaders of scientific medicine in the universities and research institutions of the state and country. They have also sought advice in their problems from organized medicine, conferring from time to time with the officials of the state and county medical societies. What a happy thing it is to find a Commission and its executive officers who are eager for advice and who are competent to judge its value and then act upon it!

I know that the things that I have spoken of are all true, but I think it will not detract one whit from the credit which belongs to the various governors of the

state and the state legislatures, the various commissions and the advisors and assistants of the commissions, to say that we all know that none of this would have been accomplished if it had not been for two men. The first of these is Dr. Simon Baruch, the first American to study hydrotherapy scientifically, and for many years professor at Columbia University in New York. During his lifetime he did more than any other person in this country to place hydrotherapeutics in its proper place in the armamentarium of the physician. He always believed that in this country we were neglecting our great natural resources such as these here in Saratoga and his interest in Saratoga and the development of these resources never wavered.

The second is his son, Mr. Bernard Baruch, who was so impressed by the convictions of his father that he has never ceased in his efforts to make Saratoga Springs available to the people. Anything that one would say in appreciation of their work must fall short of its desserts. There might well be placed a tablet here with their names and the last part of the inscription which is found on the tomb of Sir Christopher Wren in St. Paul's, "Si monumentum requiras, circumspice," which translated is "If you require a monument, look about you."

### CHRONIC ILLNESS

To understand the purpose and the value of an establishment such as is being developed here in Saratoga Springs one must have some idea of the fundamental problems of chronic illness. Chronic illnesses have certain general characteristics: *First:* Chronicity—they last a long time. Strictly speaking, many of them are incurable. *Second:* During their course by interfering with function they produce handicap and often suffering. *Third:* Quite often such conditions are not the direct cause of death. In many forms of chronic disease death is frequently due to intercurrent acute manifestations, some

times of the underlying disease but often to some other disease which, finding its victim in a state of lowered resistance as a result of the chronic process, interferes with recovery.

Though chronic disease frequently remains with the patient, its proper management and treatment often controls and nearly always slows the progress of the disease, and such treatment teaches the patient to accommodate himself to his physical limitations and to live a useful and happy existence without further injury. It also teaches him to increase the reserve of the handicapped functions. It makes clear to the patient the wisdom of utilizing fully such functions as have little or no handicap and reeducates him to get joy out of doing things which he can do rather than insisting on doing the things which he cannot do.

Now, why are waters such as we find here peculiarly useful in the treatment of chronic disease, in increasing the patient's reserve or ability to function? I think it is safe to say that this is chiefly due to the effect upon the distribution of the blood supply to the various organs of the body. That the waters have an immediate effect upon the circulation depending upon the salt and  $\text{CO}_2$  content, the temperature at which given, and the length of time applied, there is no question. This may be objectively proved. That patients, after a course of such baths properly given, have the reserve power of certain organs increased cannot be doubted. We have therefore in these waters a therapeutic instrument which if properly used may be of great benefit to our people. That it may be available for proper use depends upon three groups of individuals: the owners, who, I am happy to say are the State; the community which has grown around the springs, namely, the people of the county and city of Saratoga; and the medical profession.

It would be difficult to overestimate what vision the State has shown during the past few years in the development of these natural resources. First, she has obtained control of them; second, through various commissions who have gone to the far places of the world, as well as to domestic authorities, she has studied and developed a plan; third, she is putting this plan into execution and we are here today to celebrate a part of the development. If the State will continue such a policy

we need have no fears for the future of the Saratoga Springs. Let us hope that future administrations and legislation will be as careful as those of the past few years have been to avoid the seeking of special privileges, keeping one thing steadily before them as a guide, the development of these natural resources so that they may be used by all the people for their most important purpose, the prevention and alleviation of chronic disease. Because the reservation is beautiful, it would make a charming picnic ground, but at what a cost. Its use as a cure park would be gone for ever. Let us hope that in its development the State may never be tempted to allow its use for purposes other than rest and quiet. Let us hope that automobiles may remain excluded, and that nothing be allowed to enter which would in any way annoy the sick and tired who come to it as a haven. Is it too much to hope that there may be a few acres in this great state without hot dog stands, gasoline stations, or billboards?

If this great instrument for the treatment of disease is to be used to its fullest extent by all the people, the citizens of Saratoga also have a responsibility, a responsibility which I believe they have never fully met. The village, now so attractive to those who are well, must be made equally attractive to people who need rest and quiet. Facilities for the housing, feeding, and entertainment of tired people of various social backgrounds and financial capacities must be provided. Comfortable places to live should be provided where simple but excellent food, as prescribed by the physician, may be obtained, affording a reasonable profit. The Saratoga cure will not attract people for a single month as does the racing. It is quite understandable that with a short season, such as the racing season, prices have to be high. While the cure will unquestionably be seasonable, the season will be long, I should think seven or eight months, and when there are proper facilities for patients of various incomes and cultures, many will come here throughout the year.

If the citizens of Saratoga and New York State have been lethargic in their interest in Saratoga Springs, what is to be said of the medical profession? I do not speak particularly of the profession as represented in Saratoga County. In fact, these doctors have been interested and have made it possible for many to

receive the benefits of the waters under competent direction. On the other hand, the profession as a whole has been lethargic. There are several explanations for this. The first is a rather general lack of interest by the profession in the patient with a chronic disease; then the fact that we as a profession tend to pay more attention to technics associated with rapid cures than to those in which prolonged attention enables the patient to develop such resources as are left to him. Furthermore, we still think of preventive medicine chiefly in respect to infectious disease because of the phenomenal advances which have been made in applied bacteriology. Then, too, there is the question of a technic, if we consider the spa with its waters, bath houses, diagnostic institute, and cure park as an instrument, a large instrument, very delicate and quite complicated. To use it properly to the best advantage of the patient the physician must develop this technic. With the instrument as incomplete as it has been in the past it is natural that few physicians had the temerity to master the technic with an uncompleted tool. It is also natural that the best results could hardly be expected from the use of such an imperfect instrument. It does not, however, excuse the general lack of interest on the part of the profession in the development of these resources. But now that in Saratoga Springs we are having this great opportunity, the medical profession of the State has very real responsibilities. Like any surgical instrument, this cure, if used by men ignorant of its technics, may do harm. At present there are only a very few who can be said to have a good knowledge of it. The profession and the

State should encourage here a school for the study of the use of the spa in the treatment of such chronic diseases as may be prevented and helped by its use.

In addition, there will be presented an unrivalled opportunity in this institution, which I think it is fair to say has never been equalled, to study the nature of certain chronic diseases. Here the State is going to make it possible to study under ideal conditions certain phases of chronic disease of which so little is known. This opportunity can only be grasped to its fullest if the profession of medicine cooperates.

In sending patients to the spa for treatment there should be some way for the outside physician to know who is qualified to prescribe the cure. Certainly, every licensed physician is not so qualified and the indiscriminate use of such facilities as are being developed here with no medical advice or improper medical advice could not but help to bring even this great spa into disrepute.

Briefly I have tried to show that much has been accomplished and, we are glad to say, with vision. If the greatest good is to come out of this endeavor it must come as a joint effort of the state backing its commission, the people of Saratoga Springs and the medical profession. We have every reason from what we see here to-day to believe that such cooperation will continue and become even more coordinated. The result will be that people from our state, our country and from other countries will come here to lie down in green pastures with living but not still waters and so restore not only their souls but also their bodies.

## ANNUAL MEETING OF THE FIFTH DISTRICT BRANCH

On October 2 the Fifth District Branch convened at Syracuse. Two hundred and forty-six physicians from the counties of Herkimer, Jefferson, Lewis, Madison, Oneida, Onondaga, and Oswego attended.

At the morning session Dr. Charles D. Post of Syracuse, President of the Onondaga County Medical Society, gave an address of welcome.

Two scientific presentations followed: *The Vagaries of Appendicitis*, by Frederic H. Flaherty, M.D., Syracuse. Discussion was opened by Hyzer W. Jones, M.D., Utica, and there followed considerable general discussion by both medical men and surgeons. *The Diagnosis and Treatment of Amebiasis*, by Thomas T. Mackie, M.D., New York. An

interesting discussion on this practical paper was given by Col. Robert H. Pierson, M.C., U.S.A. (retired), of Fayetteville.

The President of the Medical Society of the State of New York then gave an address in which he particularly stressed the work of the Society to help its members to improve their professional equipment and also spoke of the application of the TERA to the individual practitioner.

At the afternoon session the following papers were read: *The Rôle of Lead and Arsenic in Diseases of the Nervous System*, by Leon P. Cornwall, M.D., New York. The discussion was opened by Robert K. Brewer, M.D., Syracuse.

The paper provoked much interest because

it brought out much that is generally overlooked in the diagnosis of obscure cases and because in various industries there are hazards of chemical poisoning. *Pregnancy in Diabetes*, by Elliott P. Joslin, M.D., Boston, Mass. (by invitation). Dr. Joslin received a real tribute when all the members present stood after a graceful introduction by Dr. Groat. *Psychiatry and the General Practitioner*, by Mortimer W. Ryner, M.D., Medical Director, Bloomingdale Hospital, White Plains. Because this paper required for presentation more time than was available, it was cut short before completion. It will appear in full in the JOURNAL.

At the Evening Session there was set an unusually interesting symposium on *The Importance of Vitamins in Foodstuffs*. Frederick F. Tisdall, M.D., of Toronto, Canada, read the formal paper, and discussion followed by Brewster C. Douse, M.D., as to pediatrics, Raymond J. Pieri, M.D., as to obstetrics, and George P. Schafer, D.D.S., as

to dentistry. The paper and the discussion produced great interest in the meeting, and because of the applications to all people, in the press.

At the Executive Meeting Dr. Groat presented his resignation as President of the Fifth District Branch in order to render valid, under the technicalities of the by-laws, his coming reelection by the Council, as chairman of Standing Committee on Scientific Work of the Medical Society of the State of New York. The resignation was accepted with real regret.

The officers for the ensuing year will thus become:

*President* (acting) LeRoy F. Hollis, M.D., Laconia

*Second Vice President* Murray W. Gardner, M.D., Watertown

*Secretary* Fred C. Sablin, M.D., Little Falls

*Treasurer* Herman G. Germer, M.D., Canastota

## ANNUAL MEETING OF THE SIXTH DISTRICT BRANCH

Under the chairmanship of its President, Dr. John E. Wattenberg of Cortland, the Branch held its annual meeting on September 26, 1934, at Cortland. Members and guests came from the Counties of Broome, Chenango, Chemung, Cortland, Delaware, Otsego, Schuyler, Tompkins and Tioga.

At the morning session the following subjects were presented:

*Address of Welcome* by William A. Wall, M.D., Cortland, President, Cortland County Medical Society

*Syphilis of the Central Nervous System* by Hugh S. Gregory, M.D., Binghamton. Discussion by Eugene E. Bauer, M.D., Oswego, Orin Q. Flint, M.D., Delhi, and Stuart Piper, M.D., Elmira

*Traumatic Surgery: Essentials to Prevention and Cure of Disabilities*, by Martin B. Tinker, M.D., Ithaca. Discussion by Harry Fish, M.D., Waverly, and Thomas F. Munley, M.D., Norwich

*Treatment of Pneumonia*, by Russell L. Cecil, M.D., New York City. Discussion by Clifton H. Berlinghof, M.D., Binghamton, and Allen W. Holmes, M.D., Watkins Glen

*Surgical Management of Carcinoma of the Rectum and Rectosigmoid*, motion pictures, by Claude F. Dixon, M.D., Mayo

Clinic, Rochester, Minn. Discussion by Guy S. Carpenter, M.D., Waverly, and Ross G. Loop, M.C., Elmira

During luncheon, Dr. Arthur J. Bedell, of Albany, as President of the Medical Society of the State of New York, spoke on the subject of *The New York State Journal of Medicine*

In the afternoon the scientific session was resumed with the following subjects and speakers:

*The Tragedy of Appendicitis*, by Donald Guthrie, M.D., Sayre, Pa., President, Pennsylvania State Medical Society. Discussion by Arthur W. Booth, M.D., Elmira, James Greenough, M.D., Oneonta

*Treatment of Bacterial Endocarditis*, by Ronald L. Hamilton, M.D., Sayre, Pa. Discussion by George Mackenzie, M.D., Coopers-town, Norman Moore, M.D., Ithaca

*Intestinal Obstruction*, by William D. Johnson, M.D., Batavia. Discussion by Dwight G. Dudley, M.D., Endicott, William H. Hobbs, M.D., Binghamton, and Frank J. McCormick, M.C., Ithaca

*The Technique of Obstetrical Forceps*, by William T. Getman, M.D., Buffalo. Discussion by Herbert W. Fudge, M.D., Elmira, and John W. Judd, M.D., Ithaca

## ANNUAL MEETING OF THE SEVENTH DISTRICT BRANCH

At the Auburn Country Club on September 27, 1934, the Seventh District Branch convened in its annual meeting.

The morning session included the following papers:

*Arthritis*, by Russell L. Cecil, M.D., New York City. Discussion opened by Floyd R.

Wright, M.D., Clifton Springs Sanitarium

*Common and Unusual Heart Lesions*, by Harrison S. Martland, M.D., Newark, N. J. Discussion opened by Floyd S. Winslow, M.D., Rochester

After luncheon, the program proceeded

*Address*, by Arthur J. Bedell, M.D., President, Medical Society of the State of New York, Albany.

*Management of Gastric Lesions, Peptic Ulcer, and Malignancy*, by Frank H. Lahey,

M.D., Boston, Mass. Discussion opened by Alfred Armstrong, M.D., Canandaigua.

*Recent Advances in Neurology*, by Foster Kennedy, M.D., New York City. Discussion opened by Louis T. Waldo, M.D., Rochester.

## ANNUAL MEETING OF THE EIGHTH DISTRICT BRANCH

On October 4, 1934, the Eighth District Branch of the Medical Society of the State of New York held its annual meeting at Jamestown. One hundred and forty-three physicians from the Counties of Alleghany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, and Wyoming were present. The attendance was 142.

**THE MORNING SESSION.**—*The Successful Application of the Welfare Law*, by Joseph S. Lawrence, M.D., Executive Officer, Medical Society of the State of New York. *The Nondrainage Treatment of Peritonitis*, by George W. Cottis, M.D., F.A.C.S., Jamestown. Discussion was contributed by Dr.

Harry Trick, Buffalo; Dr. Herbert A. Smith, Buffalo; Dr. Wm. D. Johnson, Batavia. *The Development and Present Status of Neurosurgery*, by Wallace B. Hamby, M.D., Buffalo; *Gallbladder Disease*, by Malcolm H. V. Cameron, M.D., Canada, F.A.C.S., F.R.C.S., President, Toronto Academy of Medicine, Assistant Professor (ret.) Dept. of Surgery, University of Toronto.

When Dr. Wm. D. Johnson of Batavia was called upon to discuss Dr. Cameron's paper he said "that Dr. Cameron's talk had left such a pleasant impression with him that he did not want to disturb that impression by discussion."

## FOURTH ANNUAL MEDICODENTAL JOINT MEETING IN GREATER NEW YORK

Under the auspices of the Better Dentistry meeting of Greater New York, the five County Medical Societies, and the two District Dental Societies will hold a joint scientific meeting on December 3, 1934, for the fourth time.

The object of this meeting is to call attention of the members of both professions to the close relationship existing between systemic and dental diseases and to stimulate more interest and greater cooperation between the practitioners in the care of their patients, to the end that the public shall receive better service.

While this meeting is local in the metropolitan area, the JOURNAL believes that the principle involved deserves wider application; therefore the full program is here presented:

*Morning Session: 10 o'clock.*

Report on questionnaires sent to the Medical and Dental Colleges in the United States and Canada, M. O. Magid, M.D.

Discussion: William J. Geis, M.D.

*Afternoon Session: 2:30 o'clock.*

*The Burning Tongue.* (a) Medical Aspect, Samuel Clement Burchell, M.D.; (b) Dental Aspect, Joseph Schroff, M.D., D.D.S.

Discussion: John Homer Cudmore, M.D., Henry J. Spencer, M.D., Herman Prinz, M.D., D.D.S., Daniel E. Ziskin, D.D.S.

*Dermatological Manifestations of Oral Diseases and Oral Manifestations of Systemic Diseases*, Isadore Rosen, M.D.

Discussion: George H. Lewis, M.D., H. J. Kauffer, D.D.S.

*Evening Session: 8:30 o'clock.*

New York Dental Centennial Celebration.

*Transition in the Art and Science of Dentistry*, Dr. Frank A. Casto, President, American Dental Association.

*Importance of Focal Infection as Related to Health*, Dr. E. C. Rosenow, Mayo Clinic.

## MEDICAL BROADCASTS

Scheduled under the auspices of the Medical Information Bureau of the New York Academy of Medicine and the Medical Society of the County of New York from Station WABC, Columbia Broadcasting System:

Thursday, November 22, at 11:15 A. M., 15 minutes. Subject: "After the Diagnosis." Speaker: Dr. William Darrach, Chairman of

the Committee on the Grading of Nursing Schools.

Thursday, November 29, at 11:15 A. M., 15 minutes. Subject: "Value of the Christmas Seal." Speaker: Dr. I. Ogden Woodruff, President, New York Tuberculosis and Health Association.

## RECORD-KEEPING IN TUB. SANATORIA

For the first time it is now possible for tuberculosis sanatoria to keep uniform and complete records of all material facts about their patients, available at all times for instant consultation. This important improvement in health bookkeeping is a result of two years' work done by a committee of the American Sanatorium Association, assisted in a secretarial capacity by members of the staff of the National Tuberculosis Association. The 23 new forms which have been prepared are obtainable from the Livingston Press, Livingston, N. Y.

Formerly it was often necessary, when information of a consecutive or cumulative nature was needed, to expend considerable time and effort to collect and arrange pertinent facts from records made at different times, and reposing in various forms which were kept primarily for other reasons than the one which might now be in mind. The new system has the added advantage in rendering available, as a matter of routine, facts which serve to satisfy statistical needs from a national viewpoint.

Some of the forms are merely improvements over existing ones; others make an original contribution. Among the latter are these pertaining, respectively, to (a) nose, throat, ear, eye, and teeth; (b) pneumothorax; (c) operations; (d) tuberculous empyema; (e) statistical summary on discharge.

Forms are numbered and designated, as follows:

1. History, 4 pages.
2. Examination.
3. Nose, throat, ear, and eye—teeth.
4. Physician's orders.
5. Nurse's record.
6. Weight chart.
7. Temperature, pulse, and respiration.
8. Laboratory examinations (sputum, etc.).
9. Laboratory examinations (blood, etc.).
10. X-ray.
11. Re-examination.
12. Pneumothorax.
13. Exercise chart.
14. Heliotherapy.
15. Prescription for physiotherapy.
16. Consultation.
17. Operations.
18. Tuberculous empyema.
19. Permission for autopsy.
20. Admissions—discharges.
21. Statistical summary on discharge.
22. Blank form (heading only).
23. File folder.

The Committee of the American Sanatorium Association which was appointed to prepare the forms comprised: Dr. Everett Morris, of Auberry, California, chairman; Dr. H. A. Pattison, Dr. Ernest B. Emerson, Dr. F. Maurice McPhedran, Dr. Harry J. Corper, Dr. C. C. Browning, and Dr. Walter J. Marcle.

The secretarial work was done under the supervision of Jessamine S. Whitney, statistician of the National Tuberculosis Association.

## THE NEW LILLY RESEARCH LABORATORIES

More than a thousand investigators and research workers were present at the formal opening of the new Lilly Research Laboratories at Indianapolis, on October 11. The gathering of distinguished visitors representing many noted bodies and famous institutions in this and foreign countries as well, assembled in a mammoth tent erected for the occasion.

At the formal opening exercises, in the afternoon, Eli Lilly, head of the organization, presided. Mr. J. K. Lilly, chairman of the Board of Directors, was introduced and responded briefly on "Research in Manufacturing Pharmacy," from the time of his entrance in the organization in 1876 up to the present.

Following Mr. Lilly's remarks, Dr. Irving Langmuir, Director of Research for the General

Electric Company, discussed "The Unpredictable Results of Research."

The chairman then introduced Sir Frederick Banting, who talked on "The Early History of Insulin." He gave an account of the early experiments conducted by Dr. Best and himself which first demonstrated the existence of insulin, and expressed his great appreciation of the cooperation which he and his associates had received from the staff of the Lilly Research Laboratories in the development of a practical, large-scale procedure for the production of insulin.

Sir Henry Dale, Director of the National Institute for Medical Research, London, and Secretary of the Royal Society, was the last speaker on the afternoon program. He chose as his topic "Chemical Ideas in Medicine and Biology."

## MORE ABOUT MEDICINE IN CHINA

Another story showing that "the heathen Chinese is peculiar" in medical matters is told in a new book called "Medicine Man in China," reviewed in the *Bronx County Medical Bulletin*. This account of a young Chinese army captain, who had been wounded during a revolution, illustrates the natives' ignorance and distrust of surgery. The bullet had entered the abdomen and perforated the intestines. The youth's father, not realizing the extent of the internal injury, could not see the necessity of an opera-

tion for such a small external wound. Finally, after the patient complained that the bullet was moving around in his stomach, the father consented to its removal. The operation was performed and proved very successful. Several days later when the father saw the large operative wound, his indignation rose to great heights and he sent the doctor a bill for damages claiming that as a result of the operation his son's wound was much larger than it had been originally.

# Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

## Civil Liability of an Unlicensed Practitioner

A few years ago a case was submitted for decision to our Court of Appeals involving the civil liability of a chiropractor for alleged negligence. The plaintiff, a woman, charged that she had employed the defendant to give her chiropractic treatment, and that after receiving nine treatments she became paralyzed as a direct consequence of the negligent acts of the chiropractor. She also charged that in treating her, the defendant was engaged in the practice of medicine in violation of the statutes in such cases made and provided.

At the trial, the plaintiff gave testimony in regard to the manner in which she was treated, and supplemented this evidence by proof that the treatment was not in accordance with recognized theories of practice, and that it produced the injury which followed, and further that a person qualified to treat disease should have foreseen that the treatment might have such a result.

She obtained a verdict in the Trial Court in the sum of \$10,000, which was unanimously affirmed by the Appellate Division. The defendant then appealed to the Court of Appeals, claiming that the Trial Court was in error in charging the jury that the fact that the defendant was practicing medicine in violation of the law could not be considered by them as some evidence of negligence. The Court of Appeals, by a divided Court, held that the Trial Court erred in thus charging the jury, and reversed the judgment and sent the case back for a new trial. The basis for the reversal is stated in the following language in the majority opinion:

"Evidence of defendant's training, learning and skill and the method he used in giving the treatment was produced at the trial and upon such evidence the jury could base finding either of care or negligence, but the absence of a license does not seem to strengthen inference that might be drawn from such evidence, and *a fortiori* would not alone be a basis for such inference. Breach or neglect of duty imposed by statute or ordinance may be evidence of negligence only if there is logical connection between the proven neglect of statutory duty and the alleged negligence."

There was a vigorous dissenting opinion by Judge Crane, in which he pointed out that

to adopt the view set forth in the majority opinion would practically place the chiropractor on the same plane with a duly licensed physician so far as the rules of civil liability were concerned. He said:

"The prohibition against practicing medicine without a license was for the very purpose of protecting the public from just what happened in this case. The violation of this statute has been the direct and proximate cause of the injury. The courts will not determine in face of this statute whether a faith healer, a patent medicine man, a chiropractor, or any other class of practitioner acted according to the standards of his own school, or according to the standards of a duly licensed physician. The law, to insure against ignorance and carelessness, has laid down a rule to be followed, namely, examinations to test qualifications, and a license to practice. If a man, in violation of this statute, takes his chances in trying to cure disease, and his acts result directly in injury, he should not complain if the law, in a suit for damages, says that his violation of the statute is some evidence of his incapacity. . . .

"The Public Health Law was intended to guard individual members of the public from the injuries which might result from resorting to unexamined practitioners. The violation of the law in this case has brought about the very thing which the Legislature has tried to prevent. In *Dent v. West Virginia* (129 U. S. 114, 122) the United States Supreme Court said regarding these Public Health Laws:

"Few professions require more careful preparation by one who seeks to enter it than that of medicine. It has to deal with all those subtle and mysterious influences upon which health and life depend, and requires not only a knowledge of the properties of vegetable and mineral substances, but of the human body in all its complicated parts, and their relation to each other, as well as their influence upon the mind. The physician must be able to detect readily the presence of disease, and prescribe appropriate remedies for its removal. Every one may have occasion to consult him, but comparatively few can judge of the qualifications of learning and skill which he possesses. Reliance must be placed upon the assurance given by his license, issued by an authority competent to judge in that respect, that he possesses the requisite qualifications. Due consideration, therefore, for the protection of society may well induce the State to exclude from practice those who have not such a license, or who are found upon examination not to be fully qualified."

"These words seem quite appropriate to our present Public Health Law. The defendant held himself out as a doctor, able to cure laryngitis. He had an office where his name appeared, as though he were a duly licensed physician. The plaintiff could not tell whether or not the doctor



was licensed according to the Health Law; she was not obliged to look up the records before going to him; nor was she expected to understand all the requirements of the Regents. She was one of that public which the law sought to protect by declaring that the so-called doctor was forbidden to do the very thing he did do, and which resulted in injury. . . .

"I am convinced that the plaintiff in this case was a part of that public for whose benefit the Public Health Law in this particular was passed. It was to prevent injury to such as she that the Legislature forbade the unlicensed practice of medicine. The plaintiff was injured through the defendant's disobedience of the law. He was treating her for laryngitis by pushing her vertebra. In pushing her vertebra and twisting her head, that is, by doing the very thing the law said he must not do, he caused paralysis. Thus by these authorities, the plaintiff could prove in connection with his acts that he was practicing medicine without a license, and such violation was, to say the least, some evidence of negligence. This is as far as the trial judge went in charging the jury. Personally, I am of the opinion that where an injury is the direct and proximate result of practicing medicine without a license, a recovery can be had, as for an act negligent *per se*; but we do not need to go so far in this case."

Despite the unanswerable arguments advanced by Judge Crane in his dissenting opinion, the law of the case was of course as set forth in the majority opinion, namely, that the admitted fact that the defendant was practicing medicine without a license and thus violating the law could not be considered by the jury as any evidence of negligence, unless the plaintiff could directly connect the violation of the law by the defendant with the injury complained of.

To remedy the legal situation here considered as a result of this decision, the Legislature enacted a statute (Section 1263, paragraph 6 of the Education Law), which provides as follows:

"In any action for damages for personal injuries or death against a person not licensed hereunder for any act or acts constituting the practice of medicine as herein defined, when such act or acts were a competent producing proximate or contributing cause of such injuries or death, the fact that such person practiced medicine as herein defined without being duly licensed shall be deemed *prima facie* evidence of negligence."

This statute lays down the rule contended for by Judge Crane in his dissenting opinion and, in the judgment of your Counsel, is a wise and salutary piece of legislation. A man who practices medicine without a license should not be heard to complain if the jury, in a civil action

against him for negligence, takes that fact into consideration in determining his liability.

## Death of Patient Following Cholecystectomy

A woman about forty years of age entered a large public hospital on the gynecological service as a ward patient. A physical examination disclosed a complete descent of the uterus, flattened perineum, moderate rectocele and cystocele attendant upon complete prolapse, uterus retroverted and about normal in size, adnexae not palpable; also in the right upper quadrant there was a globular mass about four fingers below the costal border which was quite tender. The patient gave a history that for the past two years she had a feeling of a prolapse, and difficulty in moving the bowels and sometimes had blood in her stools.

While the patient was on the gynecological service she had a gallbladder attack, and the head of the surgical service was called in to examine her, and she was also examined by another doctor associated with the surgical service. The examination resulted in the diagnosis that the patient was suffering from chronic cholecystitis and cholelithiasis. The chief surgeon recommended an operation, to which the woman assented, and the other surgeon undertook to perform cholecystectomy and appendectomy.

Typical cholecystectomy was performed. The doctor found the gallbladder markedly enlarged and removed it, and found it contained a stone about the size of an egg. He also removed her appendix. While the abdomen was open he examined her liver, pancreas, stomach, duodenum, and common bile duct. These organs were normal, but the surgeon found an anomalous course of cystic artery, which looped behind and below the cystic duct. The doctor closed the wound, leaving a cigarette drain.

The patient's immediate postoperative condition was normal. However, the following night the woman became acutely ill with a high temperature. The surgeon

examined her and found tenderness along the right half of the abdomen and leakage of bile.

Upon removal of the cigarette drain it was discovered that bile was flowing freely, but there were no indications of bleeding. The doctor ordered continuous intravenous gastric lavage and morphine. Her condition continued to become worse, and diagnosis was made of an infection beneath the liver, and a quantity of light brown bile-stained pus was withdrawn by aspiration, which upon examination revealed a very virulent type of bacillus infection. Consultation was had and an operation was performed for incision and drainage of subphrenic and subhepatic collection. The patient, however, did not regain consciousness after the operation, and died a few hours later, the cause of death being given as chronic cholecystitis and cholelithiasis, contributory acute peritonitis postoperative.

The husband of the patient sometime later was appointed administrator of the deceased and instituted an action against the surgeon who performed the first operation, charging him with causing the death of his wife by reason of his negligence in performing the operation, and further charging that the operation performed by him had not been consented to. The case came on for trial before a Judge sitting without a jury, and the only witnesses who testified on behalf of the plaintiff were the husband and the sister of the deceased. The principal contention which the plaintiff made upon the trial was that the operation had been performed without consent given directly to the defendant doctor, which had been conceded by the defendant in advance of the trial. The Court dismissed the complaint at the close of the testimony put in on behalf of the plaintiff without requiring the defendant to put in a defense, and ruled that the plaintiff had failed to establish that the defendant's operation constituted an assault. There was no proof of any kind that the treatment was negligently or improperly performed. An appeal was taken from the ruling of the Trial Court, which resulted in an unanimous affirmance of the judgment in favor of the doctor.

### Treatment of Ischiorectal Abscess

A married man, thirty-nine years of age, consulted a doctor specializing in surgery with respect to a rectal condition and told the doctor that seven years before he had undergone an operation for rectal abscess, and that several months after the said operation a swelling had formed in the rectum, which caused a discharge, and that from time to time thereafter he had been troubled by a chronic discharge and swelling, and that he had been constantly troubled with constipation. The doctor examined him and found that he was suffering from a rectal fistula and recommended an operation. The doctor made a complete excision of the fistulous tract after opening it into the anal canal. The fistula was situated on the right side, the external opening being  $\frac{1}{2}$ -inch from the anus and the inner opening about 1-inch from the orifice. He made two additional incisions for the purpose of dissecting out hemorrhoidal veins. The incision for the fistula was packed with gauze, and the incisions made for the removal of the hemorrhoidal veins were closed with interrupted silk. Patient remained in the hospital for two weeks after the operation, and at the end of that time he was discharged in very satisfactory condition. He returned for aftercare to the doctor's office about twice a week for some time, and every time he appeared his condition showed extreme neglect and failure to carry out the doctor's instructions with respect to cleanliness. About two months after the operation he failed to return for further care and went to another doctor who found an abscess on the opposite side of the rectum from the location of the fistula. The said doctor performed another operation upon him with respect to that condition.

The patient thereafter instituted a malpractice action in which he charged that the defendant in performing an operation upon him with respect to an ischiorectal abscess had performed the same negligently and had failed to keep the operative field clean and free from infection so that it was necessary for him to undergo another operation. He also claimed that as a result of the defendant's alleged negligence he had lost control of his bowels.

The case came on for trial before judge and jury and the plaintiff after telling his version of the treatment he had received

and the suffering which he claimed to have undergone failed to call any physicians to testify that anything the defendant did in the treatment of the case was improper. The court, therefore, at the conclusion of the testimony introduced on behalf of the plaintiff, granted the defendant's motion to dismiss the action without requiring the defendant to be put to his defense in the case, thereby successfully terminating the case in favor of the doctor.

### Operative Treatment of Muscular Dystrophy

A boy, twelve years of age, was admitted to an orthopedic hospital for treatment as an advanced case of pseudohypertrophic muscular dystrophy with complete paralysis of the back and extremities, flexion deformities of the knees and hips, and acquired club-feet. The patient was almost totally disabled, being unable to walk, having a flexion deformity of both knees and hips. It was found that physiotherapy and manipulation of his limbs did not improve the patient's condition, and although he was a poor operative risk it was decided by the physicians in charge of the case that an operation should be performed upon the boy to overcome the flexion deformities. The patient was put under a gas-oxygen anesthesia and the flexion contractures of both knees were corrected by reverse-leverage method. The tarsal joints were vigorously stretched over a Thomas

block to correct the varus deformity and the Achilles tendon manipulated. A plaster-of-paris bandage was then applied from the groin to the toes with the knees hyperextended and the feet in neutral attitude as regards lateral position and in slight equinus. A preliminary examination for the operation had been made which indicated that the boy would be a safe subject for general anesthesia, but after the operation was completed he failed to come out of the anesthesia and went into shock. The surgeon who performed the operation gave him stimulants which improved his respiration but had no effect upon his circulatory system, and the patient expired within half an hour after the conclusion of the operation.

Subsequently an action was instituted by the administrator to recover damages, based upon allegations of wrongfully causing the boy's death against the surgeon in chief at the hospital. As a matter of fact, the doctor so named as defendant in the action did not perform the operation and was present only at the operation in the capacity of assistant. More than two years after the boy's death an attempt was made to bring in as party to the action the surgeon who actually performed the operation, but as to the second defendant the case was dismissed on showing that the action had not been brought timely against him. The plaintiff's attorney thereupon consented to discontinue the action as to both defendants.

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### COLORFUL HEALTH POINTERS

Dashes of color run through the radio talks given by the Jefferson County (Alabama) Board of Health, now bound in convenient volumes under the name, "Health by Radio." A startling title of one talk is "The Disgrace of Dying." It puts the blame for practically all deaths except those of old age squarely upon individuals or the community. The speaker declares that "everyone who dies from any other complaint than old age, dies prematurely from an 'unnatural' cause and in the vast majority of cases, a premature death is a preventable death, hence a disgraceful, be cause an unnecessary, death. The average death is a reflection on the intelligence of somebody, either the victim, his family, or the larger family, which is the community or society in which he lived. You may not believe this so permit me to elaborate somewhat."

Under the popular "Believe It or Not" challenge the listeners are invited to test their own

beliefs about certain widely held superstitions, fads, or half truths.

Some other good topics which approach public health from the point at which the listener's interest is the greatest, notes a reviewer in the *American Journal of Public Health*, are "How's Your Rheumatism?" "Wooden Indians" (about how ideas and knowledge have changed), and "Little Bugs and Big Bugs."

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Trees laden with Forbidden Fruit will be one of the sights to greet the American globe trotters who visit the Seychelle Islands on the Franconia cruise. The Forbidden Fruit is the coco de mer, the "apple" that Adam and Eve were forbidden to eat. According to tradition, the Garden of Eden was located in Praslin, one of the Seychelle Islands.

# Books

## BOOKS RECEIVED

[Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from this column will be made for review, as dictated by their merits, or in the interests of our readers.]

**Industrial Maladies.**—By Sir Thomas Legge, M.D. Edited by S. A. Henry, M.D. Octavo of 234 pages. New York and London, Oxford University Press, 1934.

**Clinical Toxicology.**—Modern Methods in the Diagnosis and Treatment of Poisoning. By Erich Leschke. Translated by C. P. Stewart, Ph.D., and O. Dorrer, Ph.D. 12mo. of 346 pages. Baltimore, William Wood & Company, 1934. Cloth, \$5.00. (The Gloucester Series.)

**X-Ray and Radium Injuries.**—Prevention and Treat-

ment. By Hector A. Colwell, Ph.D., and Sidney Russ, D.Sc. Octavo of 212 pages, illustrated. New York, Oxford University Press, 1934.

**Mothers' Guide When Sickness Comes.**—By Roger H. Dennett, M.D., and Edward T. Wilkes, M.D. Octavo of 400 pages. Garden City, N. Y., Doubleday, Doran & Company, 1934. Cloth, \$2.50.

**Practical Talks on Heart Disease.**—By George L. Carlisle, M.D. Octavo of 153 pages. Springfield, Ill. [c.1934]. Cloth, \$2.00.

## BOOKS REVIEWED

**International Clinics.**—A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, etc. Vol. 1, 44th Series, 1934. Louis Hamman, M.D., Editor. Octavo of 320 pages, illustrated. Philadelphia, J. B. Lippincott Company [c.1934]. Cloth, \$3.00.

Some of the articles in the department of Medicine are on hepatic insufficiency, jaundice, enlargement of the heart, and recent advances in the treatment of cardiac and renal edema. In the latter article, Gorham and Crouse of Albany describe some patients treated by the method of Lashmet and of Barker. Lashmet (*J.A.M.A.*, Sept. 26, 1931) emphasized the importance of the reaction of the ash of the diet in the treatment of nephritic edema. He prescribed a diet of "neutral ash" with 10 to 15 gm. of ammonium chloride daily as an acid-producing salt. M. H. Barker (*J.A.M.A.*, June 18, 1932) published observations on "Edema as Influenced by a Low Ratio of Sodium to Potassium Intake." He substituted potassium for sodium chloride giving 5 gm. of potassium chloride daily with a diet producing an acid ash, 2,500 calories, and fluids not restricted. A combination of these methods was used and of 9 patients there were 2 failures, 3 partial responses and 4 highly satisfactory results.

One section of the book is devoted to surgery, one to pediatrics and there are very good reviews of recent progress in medicine and surgery.

There is a new feature which consists of clinical case studies of two patients, the reader attempting to make his own diagnosis on the data given which will be supplemented if requested by laboratory reports.

WILLIAM E. MCCOLLOM

**A Text-Book of Pharmacology and Therapeutics.**—By Arthur R. Cushman, Tenth Edition. Edited by C. W. Edmunds, M.D., and J. A. Gunn, M.D., Octavo of 786 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$6.50.

The tenth edition of this standard work is fully up to the calibre of its predecessors. In it, new knowledge in many sections of pharmacology and therapeutics have been added, but the added material is strictly confined to facts and not to fancies. Matters of uncertainty are omitted. The section on vitamins is very informative and gives a clear picture of our knowledge of these substances.

The chemistry and pharmacology of the digitalis series are well explained. It is shown that digitalis is much more effective clinically in auricular fibrillation when the heart muscle is badly nourished and decompensated than in those cases of fibrillation in which the nutrition of the heart is good. In these, very little slowing may occur. The authors explain clearly the antagonism of the two actions of digitalis, the slowing of the rate through the inhibition mechanism and the increase in contraction and diminution in heart size due to direct action on heart muscle tone. In the normal heart this results in diminished cardiac output whereas in the malnourished decompensated heart it causes a decrease in heart size and a slower rate giving a greater cardiac output.

The latest revision of Cushman's work will keep it among the first rank of works on Pharmacology and Therapeutics.

EDWIN P. MAYNARD, JR.

**Modern Clinical Syphilology.**—By John H. Stokes, M.D. Second Edition. Octavo of 1400 pages, illustrated. Philadelphia, W. B. Saunders Company, 1934. Cloth, \$12.00.

The revised edition comprises some thirteen hundred pages and represents, in the opinion of the reviewer, one of the most complete single-volume works on any given subject. The work is remarkably comprehensive on clinical syphilology from any standpoint. Many of Stokes' text summaries and thumbnail resums, a feature of the first edition, have been added. The work has been extended to include a survey of the world literature. Numerous new illustrations are included. The author has, in addition, embraced material based on seventy-five thousand case records in this country under the organized efforts of the U. S. Public Health Service and five leading university clinics.

Whether one is a general practitioner or specialist in any branch, he would do well to possess this book for ready reference. The reviewer cannot say enough to express the manner in which he has been impressed with the results of the efforts of an outstanding leader and the respect and admiration he holds for his talent and industry.

AUGUSTUS HARRIS

**Obstetric Medicine.**—The Diagnosis and Management of the Commoner Diseases in Relation to Pregnancy. Edited by Fred L. Adair, M.D., and Edward J. Stieglitz, M.D. Octavo of 743 pages, illustrated. Philadelphia, Lea & Febiger, 1934. Cloth, \$8.00.

Here the internist and obstetrician have collaborated in an effort to manage their common problems. A perusal of this volume leaves the reader well satisfied with the results obtained. It is medicine considered from the standpoint of obstetrics and obstetrics considered from the standpoint of medicine.

Personal viewpoints which are of so much value, are expressed by a reputable list of contributors and the subject matter is thoroughly covered by men of experience in the various fields. Especially to be noted for its thoroughness is the section on infectious diseases, and in this section the chapters on Syphilis and on Venereal Diseases offer the reader some very practical points for consideration.

The authors are to be complimented for compiling a work of such a comprehensive nature.

WILLIAM C. MEAGHER

**Spinal Anesthesia.**—Technic and Clinical Application. By George R. Vehrs, M.D. Octavo of 269 pages, illustrated. St. Louis, C. V. Mosby Company, 1934. Cloth, \$5.50.

This is a thorough review of the development and stages that the method of producing spinal anesthesia has gone through. The book is very well illustrated and has an abundance of references.

Considerable space is rightfully given to physiology. There is a chapter on heart and respiration, also a chapter on circulatory and metabolic factors occurring during spinal anesthesia.

A description of the physicochemical action of novocaine in its fixation with nerve tissue is given.

W. G. FLICKINGER

**The Essentials of Physical Diagnosis.**—By Robert W. Buck, M.D. Octavo of 259 pages, illustrated. Philadelphia, W. B. Saunders Company, 1934. Cloth, \$3.00.

This volume is a practical exposition of physical diagnosis. Principles and methods are clearly presented and discussed. The interpretation and significance of physical signs are intelligently dealt with. It is the type of book for which there is a present-day need, and the student and practitioner will be amply rewarded by a study of its contents.

HENRY JOACHIM

## PREPARED PHYSICIANS

*An Address Delivered at the Meeting of the Second District Branch by the President*

ARTHUR J BEDELL M D

*Albany*

It is with some diffidence that I address you on Prepared Physicians because there must be reference to control and most of us are weary and dismayed when we look about and see the effects of codification regulation and regimentation. The subject of preparedness is too large to be considered in all of its phases this evening, but the two major and basic fundamentals, technical skill and ethical relationships are sufficiently interesting to hold our attention.

The present method of training physicians is woefully wasteful of time and energy, as well as money. We all admit that a physician should be ready to start practice before he is 27 or 30 years old. The long term of preparation dulls his youthful enthusiasm, suppresses his early impulses to progress, thereby reducing his initiative and productiveness. It is as Ruskin said of Turner's early life in school "It carefully repressed his perception of truth, his capacity of invention and his tendencies of choice." He becomes too timid, his mental reactions are inhibited by a too prolonged period of apprenticeship and dependence. This almost invariably leads to a false sense of his value. Frequently he is a mere cog in an institutional mill where he adopts the life patterns of those about him, not that this is necessarily harmful for it may be most beneficial, but it is stifling to advancement both in the theory and practice of medicine.

After many years as an undergraduate and postgraduate teacher, I have reached the conclusion that the soundest, most practical and probably the best way to save time in the preparation of a physician is to con-

centrate on his preliminary work in high school and college so that he will be ready for medical school at least two years earlier than at present. The ideal medical course should be longer in actual months of training over a shorter number of years. There is no reason why the plan proposed by Davison for a year of forty-four weeks of medical college instruction should not be introduced and a year saved for clinical work. Most students spend their vacation periods in hospitals or laboratories. How much better to have them follow a regular curriculum and remain under academic control. If in this way three years are saved in preparation we can insist upon hospital training as a requisite for license. Few, if any, will object to this necessary finishing instruction where the student is given at least one year in which to correlate his medical facts and place them in practical working order. This plan would, I am sure, give us better prepared physicians.

There is no doubt that the wise physician continues to study throughout his entire life. He budgets his time for reading, for the stimulation resulting from medical society meetings, for the investigation of puzzling problems and the writing of essays. Unless these four are combined some side of his professional fullness of life will be neglected and he will in some way restrict his field of usefulness.

The prepared physician joins his county society and regularly attends its meetings. At first, he is instructed but soon assumes the role of instructor. He goes to his District Branch meetings to widen his horizon

of medical perspective. By active interest in the State Society he takes his logical place as a leader as soon as his skill is demonstrated, which may be by papers, by discussions, by scientific exhibits or participation in the post-graduate instruction courses. The State Society offers an open forum for the advancement of medical thought not only in these ways but also in its Journal. With your help our Journal can be made one of the most important reservoirs of current medical thought. To each and every one of our State activities I urge your attention and invite your active interest.

The American Medical Association meetings should be attended whenever possible. The addresses and scientific exhibits are the finest in the country and merit the careful consideration of all physicians. As one of your delegates to the American Medical Association, I ask your serious consideration of all phases of the American Medical Association activities.

The successful physician must be taught early in life that in the knowledge of health and sickness is the power to care for the well and cure the sick. He must have an inquiring disposition, a retentive memory, and an inherent and trained ability to use all of his special senses to become a wise counsellor.

The time has come when the public should be informed regarding the qualifications of those who claim to be specialists in any department of medicine. For many years there have been examining boards consisting of members appointed or elected from special societies to conduct the examination of applicants. The first board was that devoted to ophthalmology and since then several other departments have made their influence felt in this most practical way. Up to the present state boards have not licensed specialists.

We are living in an age when the established order has been subjected to a critical examination in the crucible of economic unrest, when those untrained by experience and unqualified by mental inaptness render opinions obviously incompetent on one side and biased on the other.

Surely it is a sorry state of affairs when things pertaining to the actual practice of medicine are left to those who have never had any contact with the sick except as statisticians and readers. When the rules of health of the state are promulgated by those not associated in any way with the

delivery of medical service it is time for organized medicine to rebel.

On the air and in the press the self-appointed parade back and forth on the stage of medical service, first in one role and then in another but always cast in fanciful forms against the present day methods of practice. It is high time that we, the organized profession of the State known to all as a most humane and honorable body protest against the activities of public servants preaching against us individually and collectively. Let us make a determined stand against all health agencies which capitalize illness and raise false standards of past and future achievements of medicine for their own advancement.

Let us break the chain of governmental usurpation of medical power which grew as an automatic process one step leading to another until either by design or by chance we have arrived at the place when for the good of the people of this country we must rend it, for once it is broken the pernicious life taking procedure will stop.

The rules for professional conduct are the basis of all our relationships with patients and physicians but morals begin with individuals and not societies. When the sense of right is once obtunded it always remains weakened. Getting money under false pretenses, fee-splitting, almost always reduces the effectiveness of the recipient. Our regulations have been conceived and are enforced for the application of the all embracing golden rule to do unto others as you would have others do unto you. When everything seems to be going badly, when pinched by necessity and shrouded in the darkness of adversity, the tempter appears with a demand for an improper operation, an untrue witness statement, a false affidavit or a divided fee. Gentlemen, there is nothing which so destroys moral fiber and physical power as leading a dual existence. One cannot serve the god of medicine and the idol of ill gotten gain at the same time for inevitably the influence of the latter controls action. We know that there are very few moral delinquents in our ranks but those few bring discredit upon the entire group and they must either give up their evil ways or get out of the society.

We the organized profession of the state are vitally interested in anything which tends to reduce our efficiency, we frown upon minor infractions of our rules and grow righteously indignant when any one

dares to openly break our most protective regulations by blatantly advertising. Recently we have been chagrined and mortified by the experience of a man who attempted to elevate himself by publicizing a hospital.

If we follow these precepts we will indeed be prepared physicians not only to care for the sick and to prevent illness but also to withstand the attacks of those who wish to make physicians mere servants and the public weak supplicants.

It is as unethical for a hospital, clinic or dispensary to advertise as for an individual and when an institution does, then each and every medical member of it, is to my mind guilty, for he hopes to profit by such a display of physical plant or professional equipment.

Hospitals are false to their trust when they advertise an unknown, untried man as capable of doing a particular kind of work and without sufficient investigation force him upon the public. And this applies just as forcibly to medical colleges who blazon forth their superior advantages in the lay press.

Recently an old ghost has reappeared in a new garb. I refer to so-called medical reviews, advertising journals and drug house reprints. Most of these are unethical. Do not keep them alive by allowing your good work, your successes, to reach the profession through such channels but rather use your own State Journal.

The Workmen's Compensation Act is most unfairly managed. The State Insurance fund is so viciously and so maliciously conducted that organized medicine is forced to raise its voice in protest and demand a judicial investigation of some of its pernicious practices.

I know that underlings paid from taxes

collected from me deliberately try to destroy faith in my medical competency. I know that it is done in such an underhand fashion that carrier and physician are led to believe that my work is inferior. Gentlemen, most of you have experienced the same thing and most of you have suffered from whispering campaigns. Are you ready to show your force, make your demands and have your requests for fair play granted? If so, let us carry on in a most vigorous way with one objective, the best care for the injured. No more disparagement of known skill, no more reflections on ability but fair and square conduct by all concerned. If you are ready then let us carry your wishes to Albany this winter. Let us make this one of our major issues this year to the end that honor and reputation cannot be besmirched by paid hirelings. Let us clean house and remove the rascals high or low who stoop to such subterfuges and such deceits whether in our ranks or in those of the insurance carrier's.

Let us tonight reconsecrate ourselves to the cause of medicine and rally to the saving standards of our rules of professional conduct.

Upon each and every one rest these obligations. We cannot, we must not falter in either for if we do an overwhelming catastrophe will overtake the practice of medicine and the protection it gives the public. Our responsibilities are many, our opportunities numerous and our heritage of medical example too sacred to be denied.

I am strong in my faith and firm in my convictions that organized medicine through the individual will meet the high professional standard and ethical plane for which I hope and you desire.

344 STATE STREET

## INSPIRATION A "REAL THING" IN MEDICINE

Inspiration is "a real thing" and "a necessary thing for the medical practitioner," and it is a poor medical school which cannot supply it, "either through its atmosphere or through the personality of one or more of its teachers," says Sir Henry Brackenbury, in the course of an article in the *British Medical Journal* on "The Training of the Medical Practitioner." He goes on to say that without it the student's acquirements will be imperfect and his work, both during his studentship and thereafter through his professional career, a burden, or at least a source of infinitely less satisfaction than it might other-

wise have been. If the student is not put in the way of acquiring, or of developing, some width of culture, a zest for knowledge, a love for his work, a real sympathy with human suffering and trouble, a profound respect for confidence reposed in him, an appreciation of nobility of character and of the dignity and peculiar requirements of professional life, to that extent will the contribution made by the medical school to his medical education have failed of its complete purpose, and to that extent will he pass out from it a liability rather than an asset to his profession and to the community.

# EXPERIMENTAL EVALUATION OF THE USE OF SOME VAGINAL ANTISEPTICS DURING LABOR

## *A Preliminary Report*

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Several decades ago strong and frequently irritating solutions were used in an attempt to sterilize the vagina during labor and also for the purpose of disinfecting the vagina and uterus during the puerperium. The ineffectiveness of the practice for both purposes soon brought the method into disrepute. In the last ten years there has been considerably more interest in the subject, especially in this country and in England, which has followed the demonstration of the importance of the vaginal secretion during labor, as a source of puerperal infection, and also the introduction of new antiseptics having very high bactericidal powers and a low degree of toxicity for mammalian tissues.

Mayes,<sup>1</sup> Brown,<sup>2</sup> Bessesen,<sup>3</sup> Chase,<sup>4</sup> Somerville,<sup>5</sup> Strahlmann,<sup>6</sup> and others, have published more or less enthusiastic reports of the improved clinical results obtained through the use of various antiseptics instilled in the vagina or applied by means of a tampon during labor. However, the evaluation of the bactericidal action of these antiseptics in the vagina in vivo has received but limited study. Mayes<sup>1</sup> investigated the bactericidal action of mercurochrome on the external genitalia, in the vagina and cervix, with convincing results of the value of 4 per cent aqueous mercurochrome as a vaginal antiseptic. However, he used only blood agar plates for media and all inoculums were streaked on the surface of the media and incubated only aerobically. In our estimation this method of examination is entirely inadequate when dealing with some slow-growing organisms and a flora which is often predominately anaerobic in the vagina during labor. In our experience the anaerobes play the preëminent rôle in puerperal infection, and it is not an uncommon experience to find patients with puerperal infection of a mild nature, or patients with quite severe types of infection, to have specimens of lochia obtained from the uterus which

produce no growth whatever when streaked on the surface of freshly prepared blood agar plates. While, on the other hand, when similarly prepared plates are cultured under anaerobic conditions often profuse growth is obtained.

For these reasons we were convinced at the onset of this work that it would be necessary to have duplicate specimens of the same inoculum cultured under both aerobic and anaerobic conditions. For the purpose of making certain that all viable organisms in our specimens were provided with facilities for growth, we further deemed it necessary that in the case of solid media, the inoculum should not be streaked on the surface of the plate, but should be actually in the media, such as is accomplished by the use of poured plates. This prevents the error involved in that some slow-growing organisms do not develop colonies sufficiently large for identification before the surface of the plate becomes dry. Our study to date is incomplete, covering only three antiseptics and comparing the bacteriological findings with those of a control series of patients. The work is being continued with other antiseptics and will be presented at a later date.

In our investigations we were not concerned whether the effect of the antiseptic was achieved more in one part of the vagina than in another, on the assumption that the ideal vaginal antiseptic must thoroughly disinfect the entire vagina and not only a portion of it. As an index of this effect we do not feel that one is justified in drawing conclusions by the division of organisms found, into pathogens and nonpathogens. In fact, except in rare instances one can question with considerable authority such a division of the vaginal flora. Accordingly, in evaluating the results of our experiments we have used as an index the total number



of viable organisms in the inoculum as demonstrated by colony counts

#### TECHNIC OF INSTILLATIONS AND OF TAKING CULTURES

The technique as outlined here, was evolved after several modifications in a preliminary series of experiments, and was gradually changed to its present form which seems to be satisfactory for the quantitative determination of the number of organisms in a unit of volume of vaginal secretion, at any given time during the first stage of labor.

Long applicators, 12 inches in length, with the same quantity of absorbent cotton wound tightly about the tip, sterilized in test tubes with dry heat, were used for taking cultures. The patient was placed on a bed-pan, the legs flexed and the knees widely abducted. Sterile gloves were put on the unscrubbed hands with aseptic technique. The thumb and index finger were placed between the labia majora and labia minora on either side, the vaginal orifice being brought into view by spreading the fingers. The applicator was then inserted in the vagina touching no part of the external genitalia, until it had passed beyond the hymeneal ring. With a rotary movement in the same direction the applicator was inserted up to the vault of the vagina, rotated about fifteen times and withdrawn, the labia being kept widely apart during the entire procedure.

The swab was then rotated twenty five times in a test tube containing 8 c c of broth, the end of the swab rubbing the sides of the tube. The broth, having been taken from an icebox kept below 40° C just prior to the inoculation, was immediately replaced in the icebox.

Owing to the number of cultures and the large amount of media required for each specimen, routine cultures could not be taken on a consecutive series of patients, so that patients were selected on the delivery floor more or less at random, breech presentations only being excluded because of the possibility of diluting the vaginal contents with meconium. In every instance a culture was taken from the vagina at the onset of the experiment to serve as a control. Following this the patient was instilled, and in general cultures were taken every four hours thereafter up to the end of the first stage of labor. Instillations were repeated at vary-

ing intervals from 4 to 8 or 12 hours, the maximum number of instillations in any one patient being 5 and the minimum 1, one instillation being employed more frequently than any other number.

In the technique for instillation of an antiseptic the patient was placed in the same position as for taking the culture. Prior to the instillation an alcoholic acetone solution of the same antiseptic as that to be used for instillation was poured over the labia, perineum and adjacent skin areas covering a wide surface and allowed to remain 3 to 5 minutes before the actual instillation. The antiseptic to be instilled was used in the same quantity in all instances, namely, 15 c c. This was drawn up in a blunt-bullet-shaped aseptic syringe described by Mayes, two sizes being used, the smaller, 2 cm in diameter for primiparae, and the larger, 3 cm in diameter, for multiparae. The labiae were again separated by the same technique as described above and the syringe gently inserted in the vagina until the vault was reached. The sterile gloved hand then approximated the labiae tightly about the syringe, while the antiseptic was gently instilled and the syringe gradually withdrawn. The patient's knees were then placed together and the bed-pan removed.

#### BACTERIOLOGICAL TECHNIC

As described in the foregoing, the culture media was continually kept in the icebox, removed only to be inoculated, and immediately replaced in the icebox. It was found that the cultures could be safely kept over night without appreciable increase or decrease in the number of viable organisms in the broth. The culture tubes were removed from the icebox when preparations were completed for inoculation into the various media. In most instances a 1:40 dilution of the original 8 c c of broth was made, and 0.25 c c of the undiluted and diluted broth was then placed in melted agar tubes to which rabbit blood had been added to make a concentration of 5 per cent. After thoroughly mixing the inoculum the media was poured into petri dishes, two plates being made of the undiluted inoculum, and two plates of the diluted inoculum. One of each of these plates was incubated aerobically, the other two being incubated under strict anaerobic conditions in the McIntosh-Fildes jar. For qualitative studies of the flora the tubes

of broth were incubated aëroically, and also Robertson's deep meat media inoculated for growth in liquid media under anaërobic conditions. All media were incubated for 72 hours at 37° C. Then the plates were removed and colony characteristics noted and counts made. Frequently, it was necessary to employ a low-power binocular microscope, because of the minuteness of the colonies, for identification and counting purposes. Stained smears were made from both the broth and the anaërobic deep meat media. Further identification was carried out only occasionally. In the above technic the

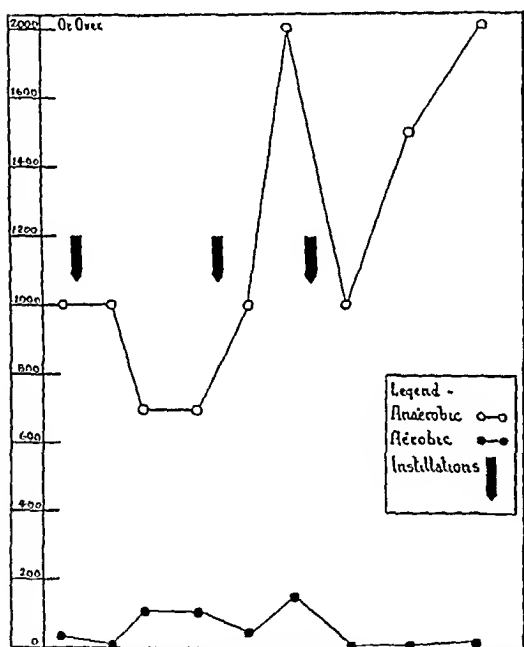


Chart I.—Colony counts of vaginal secretion, first stage of labor. Instillations of metaphen-in-oil 1:1000, No. 31051.

antiseptic action in vitro is reduced to a minimum by immediately diluting the small inoculum in a relatively large volume of broth. In the diluted broth, the deep meat media and blood plates, this error is further eliminated by the same principle.

The clinical material employed for comparative purposes is divided into four groups. In Group A metaphen-in-oil was used as the vaginal antiseptic, the alcohol acetone solution of the same drug being used to sterilize the skin of the external genitalia. Similarly in Groups B and C, mercurochrome and merthiolate, respectively, were used. In Group D, cultures were taken but no instillation nor external

skin preparation was carried out, and this group serves as a control.

GROUP A.—This group consists of 11 patients, 7 of whom were primiparae and 4 multiparae, instilled with a 1:1000 solution of metaphen-in-oil, metaphen being the anhydride of 4 nitro, 5 hydroxy-mercuri-orthocresol,  $C_6H_2:CH_3, ONO_2, Hg$ . The unusual antiseptic and disinfectant properties of this organic compound in vitro have been adequately demonstrated by Raiziss and Severac<sup>8</sup> and many other investigators. Fifty-four cultures were taken, the minimum number being two and the maximum number ten in any individual case, while the minimum number of instillations the patient received was one and the maximum number three.

Chart I illustrates a more or less typical patient receiving metaphen-in-oil instillations, the upper curve being colony counts of plates cultured under anaërobic conditions, the lower curve being plates with the identical media and inoculum incubated under aërobic conditions. One notices that the aërobic count ends slightly lower than in the control count taken before the first instillation. In spite of the fact that the patient received three instillations, we see that in general the anaërobic count progressively increases. There is a tremendous difference in this particular patient between the colony counts under aërobic and anaërobic conditions, the anaërobic count usually being higher than the aërobic count, and frequently very much higher as is illustrated in this chart.

The general results following the instillation of metaphen-in-oil are to be seen in Table I, Group A. The total colony counts decreased in only 45 per cent of the patients, the remaining counts stayed the same or increased. The results are also just as inconclusive in the patients with premature rupture of the membranes. Plate cultures showing no growth were practically negligible, in fact, only once in the 54 cultures under aërobic conditions, and in no instance in the plates incubated under anaërobic conditions did we fail to obtain a growth. Likewise, none of the cultures in broth or deep meat media were negative. On the other hand, 73 and 90 per cent, respectively, of the patients cultured in this group showed constant organisms in each specimen of broth and deep meat media cultured. Streptococci were found consistently in each culture in the deep meat media from 8 or 73 per cent

TABLE I

Antiseptic instilled	Total colony counts				Colony counts premature rupt. of membranes			No growth on blood agar plates		No growth in broth		No growth in deep meat media		Patients with one or more constants in broth		Patients with one or more constants in meat media		Patients with tetrephlo-cocci constants in broth		Patients with streptococci constants in meat media		Puer peral infection		
	Cultured	In creased	Decreased		In creased	De creased	Same	No of cult	%	No of cult	%	No of cult	%	No of cult	%	No of cult	%	No of cult	%	No of cult	%			
			Patients	%																				
A	Metaphen in oil 1000	Aerobic	4	5	45	2	1	3	0	1	18	0	0	0	8	73	10	90	3	27	8	73	1	9
	11 Patients 54 Cultures	Anaerobic	5	5	45	1	2	1	1	0	0													
B	Mercurochrome 5% aqueous sol	Aerobic	0	19	95	1	0	3	0	10	19													
	20 Patients 52 Cultures	Anaerobic	0	19	95	1	0	3	0	6	11.5	8	17	2	4	8	40	16	80	3	15	10	50	1
C	Methiolate 1 1000 aqueous sol	Aerobic	2	12	80	1	0	5	0	14	22													
	15 Patients 65 Cultures	Anaerobic	2	12	80	1	0	4	1	3	5	7	11	2	3	7	47	10	67	4	27	8	53	4
D	No instillation	Aerobic	6	8	53	1	1	1	1	2	5													
	15 Patients 44 Cultures	Anaerobic	4	7	47	4	1	1	1	0	0	1	2	0	0	13	87	15	100	5	33	11	73	4

Note \* Constants == morphi olog calli similar org in all cultures from any given patient

† Streptococci == Gram pos cocci in pairs or chains

of the patients cultured, and in each broth culture from 3 or 27 per cent of the patients cultured.

**GROUP B.**—In this group 5 per cent aqueous mercurochrome solution was used for instillation. There were 20 patients studied and a total of 52 cultures made. The group consists of 6 primiparae and 14 multiparae. The minimum number of cultures in any one patient being two and the maximum five. The minimum number of instillations was one and the maximum number two.

Chart II gives a graphic representation of the colony counts in two patients in

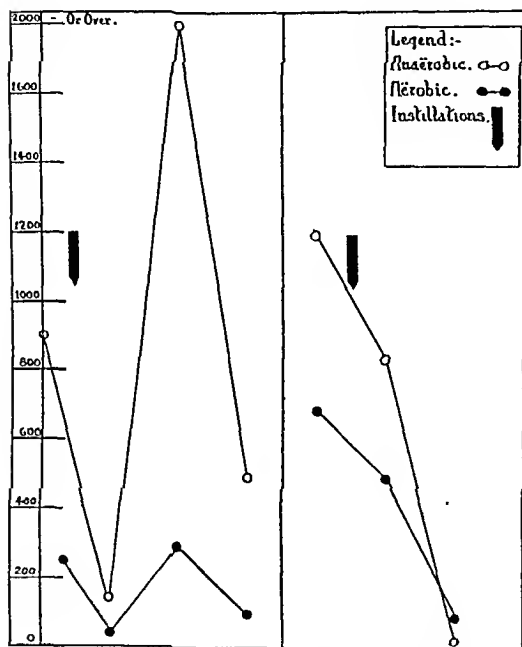


Chart II.—Colony counts of vaginal secretion, first stage of labor. Instillations of mercurochrome 5 per cent ag. sol., Nos. 40064 and 47131.

whom a single instillation of 5 per cent mercurochrome was given in each instance. In the first patient one notices that there are quite wide fluctuations with little or no apparent result from the instillation. In the second patient, on the other hand, there is quite a marked decrease in the first culture after instillation and a very marked decrease in the last culture.

In Table I, Group B, it can be seen that 95 per cent of the patients in this group showed a decrease in the colony counts under both aerobic and anaerobic conditions, the other 5 per cent remaining stationary. It is interesting to note that three of these patients had premature

rupture of the membranes and in each instance a decrease in colony counts was registered. In the blood agar plates, 19 and 11.5 per cent, respectively, showed no growth under aerobic and anaerobic conditions. Of the total broth cultures 17 per cent were negative and of all deep meat cultures 4 per cent had no growth. Forty per cent of the patients showed one or more constant findings in each broth culture, while 80 per cent had one or more constant findings in the deep meat media. Fifteen and 50 per cent, respectively, showed constant findings of streptococci in the broth and deep meat media. One

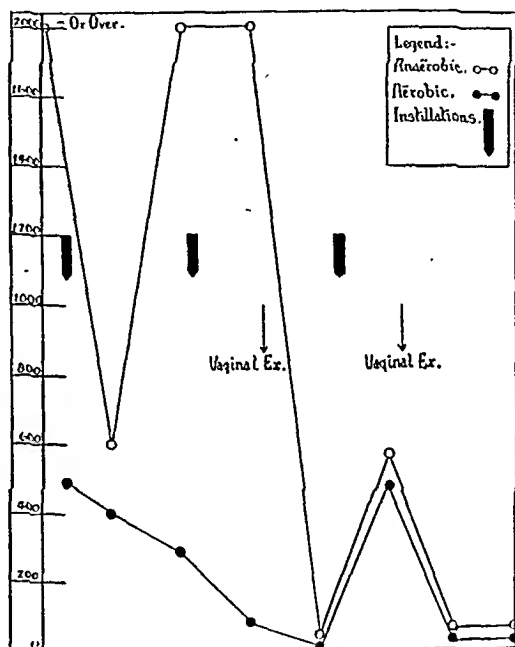


Chart III.—Colony counts of vaginal secretion, first stage of labor. Instillations of merthiolate 1:1000 ag. sol., No. 33469.

patient had a febrile puerperium, the temperature reaching 38° C. on two days.

**GROUP C.**—The instillation used was merthiolate, 1:1000 aqueous solution. There were 15 patients in all, 13 of whom were primiparae and 2 multiparae. Sixty-five cultures were taken, the minimum number being two and the maximum number eleven. The minimum number of instillations was one and the maximum five in any given patient.

Merthiolate is another organic compound of mercury, sodium ethyl mercurithiosalicylate. This antiseptic has come into prominent use and in vitro is a powerful bactericidal substance and is relatively non-

toxic when brought in contact with mammalian tissue.

Chart III illustrates the anaerobic and aerobic curves of the colony counts of a patient receiving three instillations and from whom eight cultures were taken. In this chart one sees again the wide difference between the number of organisms cultured under aerobic and anaerobic conditions and the gradual approximation of the curves and the marked diminution in the number of organisms in a given unit volume of vaginal secretion in the latter cultures.

The figures in Table I, Group C, show that 80 per cent of the patients had decreased counts under both aerobic and anaerobic conditions. In the five instances of patients who had premature rupture of the membranes in this group, all showed decreased colony counts in the aerobic plates and four decreased in the anaerobic plates while in the other patient the anaerobic plate counts remained approximately the same. Of the total plates cultured, 22 and 5 per cent showed no growth under aerobic and anaerobic conditions, respectively. Eleven per cent of all broth cultures in this group had no growth, while 3 per cent of all deep meat cultures were negative. Forty-seven per cent of the patients showed one or more constant organisms in each of the broth cultures, while 67 per cent of the patients showed constant bacteria in each of the deep meat cultures. Streptococci were constantly present in 27 per cent of the patients in all broth cultures, while 53 per cent of the patients showed streptococci to be a constant finding in the deep meat media. Four patients, or 27 per cent, had a febrile puerperium, one patient reaching 38° C. on two occasions, two patients with 38° C. on three occasions and one having rises to 38° C., or above, six times.

GROUP D.—No instillations were employed in this group, which consists of 15 patients, 8 being primiparae and 7 multiparae. There was a total of 44 cultures taken.

Chart IV illustrates two patients who received no instillations and who were more or less typical of this group. We see again the wide divergence between the lines, the upper line representing colony counts under anaerobic conditions, the lower line, colony counts under aerobic conditions. In this patient there was a

marked increase of the total colony counts. The second patient shows what are apparently normal fluctuations during labor, the final count on the anaerobic plate being slightly lower than the first count, and the final count under aerobic conditions being somewhat higher.

In Table I, Group D, we see that 53 and 47 per cent of these patients had decreased colony counts under aerobic and anaerobic conditions, respectively, the others remaining the same or increasing. There were three patients who had premature rupture of the membranes, and in one instance there were increased colony counts, one instance decreased colony

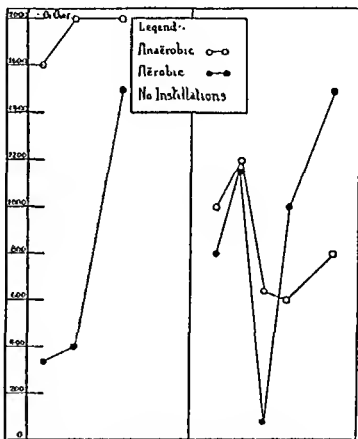


Chart IV.—Colony counts of vaginal secretion, first stage of labor. No instillations, Nos. 49133 and 37814.

counts and in the third patient the colony counts remained the same. Only 5 per cent of the blood agar plates were sterile under aerobic conditions and in no instance were the plates found to be sterile when cultured under anaerobic conditions. In only one instance, or 2 per cent, of the cultures did we fail to obtain a growth in broth and in no instance was the deep meat media sterile. On the other hand, 87 per cent of the patients in this group had one or more constant organisms in the broth, and 100 per cent of the patients had constant organisms in the deep meat media. Streptococci were present as a con-

stant finding in 33 per cent of the patients in all broth cultures, and in 73 per cent of the patients these organisms were constantly found in all the deep meat media. Four of the patients in this group had a febrile puerperium, the temperature rising to 38° C. or above on two occasions in two patients, three times in the third patient and four times in the last patient.

#### SUMMARY

Unfortunately, owing to the fact that we found a tremendous variation in the colony counts of different patients during the first stage of labor, it was impossible to correlate graphically the data of these counts.

Table I partially served the purpose but one cannot accurately express in it the extent of the decreasing or increasing, as the case may be, in the total counts. However, after carefully studying the figures we reached the same general conclusions that we reach from Table I.

It will be noted that the colony counts in Group A where metaphen-in-oil was instilled were practically duplicated in Group D where no instillation was employed. Again, in an analysis of the results obtained in liquid media we find that metaphen-in-oil exerted but slight bactericidal action in the vagina. Constant findings of one or more organisms in the deep meat media were noted in 100 per cent of the patients who received no instillations, while in the group of patients who received metaphen-in-oil as an instillation, 90 per cent had constant organisms in all the deep meat cultures.

In the same Table we see that the total colony counts decreased very markedly in Groups B and C, 95 per cent in the former and 80 per cent in the latter. These antiseptics were apparently also more efficient in the patients who had premature rupture of the membranes. Furthermore, constant findings in the liquid media show a considerable diminution from the control group or the group receiving metaphen-in-oil, while also in the liquid media and in the blood agar plates the percentage of sterile cultures was much higher than in Group A or Group D.

The relatively small number of patients in each group makes it impossible to draw accurate conclusions regarding the incidence of puerperal infection. However, when we note the number of patients who had constant organisms in the liquid media,

and particularly the number who had streptococci constantly present in each of the cultures one is led to the conclusion that puerperal infection is still a possibility in spite of vaginal chemotherapy with the agents employed in this study.

#### CONCLUSIONS

1. Mercurochrome, 5 per cent aqueous solution, and merthiolate, 1:1000 aqueous solution, are both fairly efficient vaginal antiseptics during the first stage of labor. They decreased the colony counts with marked regularity and in a few instances there was at least complete temporary sterilization of the vagina.

2. Metaphen-in-oil in the concentration employed is not an efficient vaginal antiseptic during the first stage of labor, the result being approximately the same as in the group of patients who received no instillation.

3. In general the colony counts on poured plates were very much higher when incubated anaerobically than they were when incubated aerobically.

4. In a considerable number of patients each had constant organisms in her series of inoculums in spite of instillations of the more efficient vaginal antiseptics.

5. The necessity for carefully controlled experimental data, cultures being incubated under both aerobic and anaerobic conditions is necessary to accurately determine the value of an antiseptic instilled in the vagina during the first stage of labor.

We wish to express our gratitude to Dr. Cloyce R. Tew of the New York Hospital Staff for making the Charts and Table.

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## THE PATHOLOGY OF SENILE CATARACT

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The study of the pathology of senile cataract is interesting because it brings out many significant and practical points for those who are doing cataract surgery. The subject embraces not only the features seen in fixed and stained microscopic specimens of the lens but also the knowledge gained from embryological, anatomical, chemical and slit-lamp microscopical studies. The present methods of fixation and hardening produce many artifacts and do not permit demonstration of the delicate pathological changes observed in the living eye. No attempt will be made to cover the entire subject in this paper.

Cataract may be defined as any opacity of the crystalline lens. Senile cataract refers to the opacities developing in the elderly or in those who have reached or passed the adult stage.

**THE UNIQUE PHYSIOLOGY OF THE CRYSTALLINE LENS**—The crystalline lens as an organ is unique in that it is composed entirely of epithelial cells, is suspended between the aqueous and the vitreous, and has no circulation of its own. Its nutrient and growth materials and its waste products are conveyed to and from the lens by the aqueous humor which is formed by the ciliary body. The exchange with the lens is by a process of osmosis and selective absorption and excretion.

A systematic study of the various parts of the lens and their relations will bring out many points of interest. We will consider I The Zonule or Suspensory Ligament of the Crystalline Lens, II The Vitreous and the Lens, III The Capsule, IV The Epithelium, V The Nucleus, and VI The Cortex.

### I THE ZONULE OR SUSPENSORY LIGAMENT OF THE CRYSTALLINE LENS

The zonular fibers are developed by protoplasmic processes which are formed at the union of the cells of the optic vesicle

and surface ectoderm in the contact which stimulates the origin of the lens. These processes are later drawn out into zonular fibers which stretch between the retina at the ora serrata, the ciliary body, and the equator of the lens. The attachment of the fibers to the retina may account for the development in certain cases of disinsertion of the retina at the ora serrata after sudden trauma to the eye head or body. The indirect force is exerted on the crystalline lens which is suspended almost as a free body. The jar may cause the disinsertion through the pull on the zonular fibers. More often, especially in the case of direct eye trauma, the zonular fibers break at the equator of the lens and partial or complete dislocation of the lens results. It is possible that traction on the zonular fibers during intracapsular extraction may be responsible for the cyclitis which develops in some cases as also for disinsertion and detachment of the retina.

The condition and age of the zonular fibers determine their elasticity, resiliency, resistance, or fragility. In eyes with dislocated lenses, either congenital or traumatic, they may appear very thin and attenuated. In nearly all cases of intracapsular extraction the zonule ruptures at the equator of the lens so that very little of the zonular fibers adhere to the lens. In certain instances, one may find broken fragments or isolated whole zonular fibers lying on the hyaloid, looking very much like thin strands of silkworm gut.

It is difficult to judge the condition of the zonular fibers before operation. Knapp has expressed the opinion that the zonule of almost any person over 65 years should break without undue force. He has also made the observation that the zonular fibers are very fragile in cases of glaucoma. They are also very fragile in certain cases of hypermature cataract.

### II THE VITREOUS AND THE LENS

The vitreous is formed by ectodermal and mesodermal elements and never develops any actual adhesions to the lens.

The author is indebted to Dr. John M. Wheeler for the opportunity to study cataract for the past ten years and to Dr. A. B. Reese for the loan of his specimens for examination.

The hyaloid membrane is a real entity and is in contact directly with the posterior capsule of the lens. The so-called ligamentum hyaloideum capsulare is merely a close apposition of the hyaloid and the posterior lens capsule.

**THE RETROLENTAL SPACE.**—There is no aqueous humor as such in the retrolental space except in a possible capillary zone between the hyaloid and the posterior lens capsule. The dark space which is observed directly behind the lens is the anterior or primary vitreous which has less fibrillar structure than the rest of the vitreous.

**FLUID VITREOUS.**—The anterior vitreous more frequently than the whole vitreous becomes fluid and loses its viscosity and gel formation. One must assume that the pressure one exerts in the expression of cataract is counterbalanced by the vitreous. For the proper reaction to this, the anterior vitreous must be in good condition. The recognition of fluid vitreous may be significant if it determines the type of operation and the procedure.

**DISLOCATION OF LENS.**—The ligamentum hyaloideum capsulare is probably not important in holding the lens in place, but the integrity of the hyaloid may determine the final position of the lens when it is dislocated. If all the zonular fibers are broken and the lens is free, it will remain anterior of the hyaloid is not ruptured. If it is ruptured, then the lens will probably drop back into the vitreous unless it is held forward by the iris or by adhesions. In cases of dislocation, therefore, it is well to look for the condition of the hyaloid and whether or not the vitreous comes forward into the anterior chamber. In cases of hypermature cataract, the zonular fibers are apt to be very fragile, so that dislocation may occur very easily.

### III. THE CAPSULE

The capsule is formed by the lens epithelial cells first as a secretion or cuticula which surrounds the lens vesicle. Later it appears as a glass membrane formed by accretion from the interior. The material is secreted by the epithelium and forced between the epithelial cells and the previously existing capsule. This mode of formation explains the gradually increasing thickness of the capsule with age and the thinness of the posterior lens capsule as compared with the anterior. The capsule always appears and remains trans-

parent except for the condition of exfoliation of the most superficial lamella.

**EXFOLIATION OF THE ZONULAR LAMELLA OF THE ANTERIOR LENS CAPSULE.**—The glass membrane of the capsule appears fused into a single layer except for the most superficial lamella. This may fragment, strip off, and exfoliate. There is usually a characteristic frosty appearance due to the minute grayish opacities which develop and are rubbed off by the action of the iris. There may remain a disk of opacity with a curled or frosty border in the position of maximum contraction of the pupil. It may or may not be associated with glaucoma due to blocking of the angle by the small particles. This condition of exfoliation of the most superficial lamella of the anterior lens capsule is a degenerative change and may indicate fragility of the zonular fibers which are inserted into this layer which is sometimes known as the zonular lamella.

**THE REACTION OF THE CAPSULE TO TRAUMA AND OPERATION.**—It is difficult before operation to judge the thickness, tension, and resistance of the capsule. It may be distended and smooth or relaxed and wrinkled. This may indicate the slack that will be taken up by the forceps or other instrument used on the capsule. In its reaction to traction and to incision the capsule behaves as if it were slightly elastic, very much like cellophane. In general it may be said that the relaxed capsule will respond better to the application of traction by the forceps or vacuum cup than the normally tense or distended and stretched capsule. Rupture occurs in the anterior or equatorial region. The capsule may be incised precisely with a sharp cystotome, the knife beak of which should be (1) very small so as not to cut into the cortex and not dig into the nucleus, (2) bevelled with the cutting stroke so as to cut keenly and not tear the capsule; it tears if a dull cystotome is used. The type of capsule forceps best suited to preserve the integrity of the anterior capsule in intracapsular extraction is one which has smooth edges and sides. A relaxed capsule will stand considerable traction before rupturing. A tense capsule will stand hardly any. Once a capsule starts to tear, it may rip up and tear off at the equatorial region where it then tears off the zonular fibers. In principle, as far as the capsule alone is concerned, the vacuum cup is best



suted for application to the capsule, as it gathers it in from all points equally and exerts a smoother and more even traction with less danger of rupture. The teeth of the toothed forceps such as are used to remove a portion of the anterior capsule should be short so that the bite will be shallow and will not disturb the deeper portions of the cortex.

Wounds in the capsule produce defects in the glass membrane which are never replaced by capsule tissue. They may be plugged by cortex or by lens epithelial cells or their products. The capsule acts as if it were elastic. It retains its true character even in the presence of severe inflammation of lytic character.

#### IV THE EPITHELIUM

The lens epithelium as such represents the only living cells in the lens. There are two functions of the epithelial cells: (1) to form new fibers, and (2) to form a secretion which controls the life and transparency of the fibers already formed. It is an interesting conception that the lens epithelial cells are quite active and divide regularly either by mitosis or by amitosis and then move off radially to the equatorial region to take part in the formation of the cortex. The new fibers formed here are pushed centrally and lose their nuclei. They exist probably under the influence of the secretion of the living epithelial cells and thus maintain their transparency and optical properties. The epithelium continues to form new fibers continually throughout the life of the individual unless cataract supervenes. In the development of cataract the epithelium usually dies or degenerates. It may proliferate and in some instances where the outermost epithelial cells have become detached from the cortex, may grow to line the posterior capsule. In cases where cataract follows inflammation, flat opaque cell forms may develop beneath the capsule to add to the general opacity. In after cataract, flat epithelial cells may be formed or crystalline spherules of hyaline material, so-called Elschnig's spheres, similar to the glass membrane capsule may be secreted.

#### V THE NUCLEUS

The nucleus of the lens consists of the hardened dehydrated and compressed fibers, which have formed first in the outermost layers of the cortex and have gradually been pushed toward the center of the lens.

**NUCLEAR CATARACT** — Physiological sclerosis of the lens begins with the earliest hardening of the fibers in the embryo. The cells of the posterior wall of the lens vesicle grow forward, lose their nuclei, and are finally compressed to the center of the lens. The fibers formed from the fetal period to that of adult life are likewise compressed. The process entails dehydration and sclerosis or hardening and the formation of the so called nucleus which may be divided according to the zones of separation into the embryonic, the infantile nucleus, the adolescent nucleus, the adult and the senile nucleus. In certain cases of extreme sclerosis there is no soft cortex, the outer layers becoming hard and forming a nuclear cataract which involves the entire lens.

Loss of accommodation accompanies physiological sclerosis and at a certain age there develops presbyopia through the formation of an unyielding nucleus. Clinically, all accommodation has gone about the age of seventy years and hence one may say that the entire lens has become hard and unyielding and that there is no longer any pliable cortex.

Through a process of pathological sclerosis there develops nuclear cataract. The hardening of the lens proceeds more quickly and with less uniformity than in the normal. The hardened material in such instances is no longer hygroscopic. There may develop abnormal and irregular interfaces pressure surfaces differences in refraction of the component parts of the lens, abnormal chemical combinations of the lens protein, all of which result in nuclear cataract. Colorations from amber hue to mahogany or cherry red, brown or black cataract develop. Lenticular myopia or "second sight" usually intervenes and may reach a high degree in certain cases. In some, lenses of double foci may form. The interference with vision is not so much through actual opacity as through the haze of the interfering lens media. It is difficult to get good pathological sections of such hard material. The recognition of the degree of hardening of such a cataract by slit-lamp microscopy is important as it is well known that in the great degrees where there is no longer any hygroscopic cortex remaining, the capsulotomy operation is admirably suited, the entire contents of the capsule coming away. There is no need for intracapsular extraction in these cases.

## VI. THE CORTEX

**SENILE CORTICAL CATARACT.**—The senile cortex represents the outermost lens fibers. These fibers may be still soft and pliable. The protein in the fibers is still hygroscopic and capable of considerable swelling. The incipient form of senile cortical opacity is characterized by the development of subcapsular vacuoles or globules, separation of the lamellae, splitting of the sutures, and cortical haze. All of these features may be explained by the conception that a colloidal fluid which has been attracted through the capsule or has been extruded from its combination with the lens protein in the fibers is forced under pressure through the normal interfibrillar diffusion spaces. (*Note:* None of the features referred to can be accurately demonstrated in the micropathological specimen as all are altered in the process of fixation and hardening. It is interesting that due to the anatomical structure of the lens, symmetrical anterior and posterior planes of the lens are involved by the processes of water-splitting of the sutures and separation of the lamellae.

After cataract is initiated, it may be that enzymes help to carry on the work of destruction of the lens protein. Each living cell may carry or be exposed to its own specific destructive agent which will reduce it to its original elements. In the case of the lens cells, the enzyme may coexist with the cell or be brought to it by the aqueous which enters under pathological conditions. In the case of traumatic cataract, the aqueous humor, which under normal conditions carries nutrient and growth materials to the lens and transports its metabolic products, proves destructive to the lens fibers and protein. The hygroscopic lens material swells and its destruction is most probably effected by the lytic action of the enzymes brought in by the aqueous or ever present in the cells waiting for the time to act and destroy the protein. We know that the water-soluble protein of the lens fibers is constantly being removed. This is probably the physiological action of these proteolytic enzymes. In conditions which initiate senile cortical cataract, these enzymes may become abnormally active.

**IMMATURE CATARACT.**—From the incipient stage, progress in opacity and haze is made by extension of the processes referred to and also by denaturation and coagulation of the lens protein which has

come by lysis from the lens fibers. There may form a smooth homogeneous coagulum or clot or by partial aggregations of the denatured material there may develop different morgagnian globules. These are seen best in their discrete forms in the fissures. They may be of (1) granular nature with dull reflex and with no surface membrane, simply an aggregation of granules into minute spheres which are suspended in the liquor Morgagni, (2) globules with a surface membrane of high luster and reflex and with pearly or opalescent fluid content, or (3) a form in which the surface membrane is present but the contents are dull and a solid greyish hue.

Complete destruction of the lens fibers is finally accomplished. Pathological specimens show the swollen, broken fibers mixed with fluid and debris, pultaceous, granular and other material. The swelling of the lens cortex and distention of the capsule in the intumescent stage is accomplished by the intake of a great excess of water, because of the hygroscopic nature of the lens protein. The spontaneous rupture of the capsule under these conditions has not been reported, but it seems possible. In cases of deficient anterior chamber drainage with a tendency to glaucoma, the intra-ocular tension may be elevated by the further obstruction incident to the pressure on the iris root.

**MATURE CATARACT.**—The transition from the intumescent stage to the mature stage is accomplished by the abstraction of excess water from the lens. This is effected only after complete destruction of the hygroscopic lens protein. The lens protein byproducts no longer have the affinity for excess water. Abnormal organic and inorganic compounds now are attracted and enter under the conditions of altered permeability of the capsule. The most important of these abnormal substances are the fats and the calcium compounds. In the early stages the fats form the surface membranes for the morgagnian globules, the linings for the split sutures, and the coatings for the lamellae. In the later stages, they mix with the protein debris to form the pultaceous masses.

**HYPERMATURE CATARACT.**—The final stages of senile cortical cataract are brought about by the removal of the excess water and soluble lens protein material through the capsule. There remain in the capsule the degenerated epithelial cells, the pultaceous mass of insoluble cortex protein

mixed with abnormal organic and inorganic materials, and the hard, resistant nucleus. The hypermature forms are

(1) The morgagnian cataract, a condition produced by further disintegration and digestion of the cortical material. There is a turbid suspension of granular debris and hard nucleus in cloudy amber fluid in the flaccid sac formed by the capsule. The sections of morgagnian cataract show the hard nucleus placed eccentrically in the most dependent portion of the capsule sac. It is conceivable that the enzyme action which produced the digestion and liquefaction of the cortex might go on to cause complete disintegration of the contents of the capsule. The zonular fibers in these cases are apt to be quite fragile so that intracapsular extraction may be in order.

(2) The chalky cataract, reached by greater calcium deposit with hardening of the greater part of the lens. These forms can easily be recognized clinically. The chalky form is enclosed in a wrinkled capsular bag. It is composed of dense amorphous granular material with irregular spotty calcareous deposits outermost and surrounding the remnant of the hard nucleus. From the appearance of the pathological specimens it would be difficult to separate the wrinkled capsule from its irregular contents. The zonule in these cases is fragile so that intracapsular extraction may be indicated. The wrinkled and relatively tough capsule in both the morgagnian and chalky forms affords easy purchase for the traction instrument.

**POSTERIOR CORTICAL CATARACT**—This type begins with vacuoles or globules in the posterior cortical layers. Between and around these features develop irregular deposits of opaque material. The posterior cortical area of the lens is the most poorly nourished. The vitreous is here in contact with the posterior capsule and the ends of the youngest fibers reach the posterior capsule in this area. Toxic substances in the vitreous or faulty nutrition of the lens will affect the posterior cortical area first. It is difficult to demonstrate this type microscopically.

**ANTERIOR AND POSTERIOR SUBCAPSULAR CATARACT**—This is a rapidly progressive form found in so called early senile forms as well as in complicated or toxic conditions, either local or systemic. It is seen in tetany, diabetes in the young neurodermatitis, detachment of the retina. It is

not always a sign of these complicated conditions. Many of these cataracts have been removed in early senile forms and excellent visual results obtained. The opacity begins with anterior and posterior subcapsular vacuoles. These increase in number and size and there develops a cloudy swelling of the cortex which quickly disintegrates. An intumescent cataract results. The complete opacity or mature form may be reached very quickly, even within a few weeks. The cataract is best removed by the capsulotomy method.

Under pathology of the lens must also be considered that very interesting allergic reaction which occurs in certain sensitized individuals. It is possible for a person to become allergic or anaphylactic to the protein of his own lens. Verhoeff and Lemoine have demonstrated that such a state does at times exist in otherwise normal persons. They state that if the lens capsule in such an individual is ruptured by injury or operation and dead or dying lens fibers remain in the eye, a more than usually violent local reaction is experienced. These authors describe the usual features of subacute endophthalmitis in these cases in addition to the numbers of large mononuclear phagocytes attacking the disorganized lens. Verhoeff now thinks that the method of desensitizing such individuals to their own lens protein is unsatisfactory and that the cataracts in these patients had best be removed by the intracapsular method.

**CLASSIFICATION OF LENS OPACITIES**—Lens opacities should be classified according to their light obstructing properties. The transparency of any medium is judged by its property of light transmission, that is the ratio of incident light to transmitted light. The term opacity used in speaking of changes in the lens which partially obstructs the transmission of light is only relative, for no matter how dense or complete a cataract is, it remains translucent and under proper conditions, scleral transillumination in the presence of uncomplicated cataract will produce a light reflex through the pupil. Every case of complete cataract should be transilluminated. The degree of partial lens opacity may be expressed subjectively in terms of its ability to obstruct the vision or objectively in its interference with the fundus reflex. For the latter, the terms used in denoting atmospheric conditions are good. (1) Haze, expressing the stage of vacuoles, water-

split sutures, and lamellar separation or early nuclear cataract; (2) nebula, the stage of smooth coagulum of the colloid fluid or of the fewer numbers of morgagnian globules; (3) grey cloud, the early stage of infiltration with fatty and other organic and inorganic material; and (4) black cloud, the stage of completion of the aggregation of the coagulated particles, of lens protein with further infiltration by abnormal material. The latter are represented by such dense features as the equatorial wedge opacity of Voft which forms after lamellar separation, the familiar "rider" or "spoke" which is seen in symmetrical anterior and posterior fissures or split sutures, the immature, mature, and hypermature forms of senile cataract.

The combination of several of the partial opacity features in the same or different stages make a picture of immature cataract which is very difficult to evaluate in objective terms for purposes of record. Photographs do not give a true picture as they are taken by incident light. Drawings of the features seen with the aid of incident light, do not tell the whole story as they are on different levels. Fundus reflex drawings are probably the best for the record of the individual case. They may be drawn both normal size with the aid of the aperture of the reflecting ophthalmoscope and in magnification with the +16.00 D or +20.00 D lens at its proper focus. For comparison at succeeding examinations there is need for controlling the light and of duplicating the other conditions of the examination.

In summary and conclusion it is only necessary to say that senile cataract has been studied from its very embryological, its chemical and its anatomicopathological background. Most important clinically is the study with the ophthalmoscope to determine the degree of transparency remaining or conversely the degree of opacity and the study with the slit-lamp microscope to learn of the type and stage of cataract present. The information gained may influence our judgment materially in the decision as to the technic to be employed in the individual case.

780 PARK AVENUE

#### DISCUSSION

DR. D. F. GILLETTE, *Syracuse*: When you have been able to study Doctor D. B. Kirby's paper you will the more appreciate its scientific and clinical values.

We have been shown that the zonule developments after the third month when the rim of the optic vesicle grows forward to the ciliary region, at which time fine fibers grow back into the newly formed vitreous. Later, from the region of the ciliary body heavier fibers grow forward at right angles through the marginal group, forming a complex structure of fibers, extending from the ciliary body as far back as the ora serrata to the lens capsule.

Examination of a fresh specimen shows the zonule as a thick band—its anterior surface extending from the lens equator to the anterior ciliary processes, while its posterior surface, which is more curved, passes from the lens capsule along the inner surface of the ciliary body to the ora serrata.

These surfaces appear made up of delicate strands separated by a gel similar to the vitreous. The anterior and posterior surfaces are separated by an irregular meshwork of fibers, whose interspaces are filled with fluid and gel.

The coarser fibers contained in the posterior group extend from the recesses of the ciliary processes to an irregular zone about 2 mm. broad concentric with the equator, slightly broader anteriorly.

The examination of an intracapsular lens recently delivered shows the fibers to be torn at or near the capsule. These fiber stumps which can be teased into fine threads have a brush-like footing on the capsule, which appears elevated at the site of attachment.

This same condition must obtain in the accommodation relaxed lens—evidence that some traction occurs at these points.

This suggests the possibility of a separation of the capsule from the lens matter at these points varying with ciliary action and the change in elasticity of the lens cortex. This would result in a biological change, altered refractivity of the lenticular cells and interspaces, and eventually opacities. Other possible etiological factors are injury to the zonule, disease of the ciliary process and changed intra-ocular fluid.

The position of the suspensory ligament makes it almost impossible of direct examination save after iridectomy or dislocation of the lens—when in direct or reflected light it appears much like the vitreous in structure.

The fragility of the zonule is not indicated by the condition of the capsule and lens substance, so choice of operation must depend on experience.

Professor A. Elschmig has described a helpful procedure to determine the choice of operation, *i. e.*, the most satisfactory cases for intracapsular extraction are those in which the pupil readily dilates with the introduction of not more than two drops of one per cent homatropine.

Those not dilating are best suited for extracapsular operation.

A still further help in cataract surgery was given by Dr. W. Atkinson, *i. e.*, a method of local anesthesia (akinesia and orbital injection within the cone), that materially helps in the intracapsular delivery. When satisfactorily obtained, this type of anesthesia allows the lifting of the lens without undue counter pressure.

THE PRESENT STATUS OF THE FEMALE SEX HORMONE FROM  
THE CLINICAL STANDPOINT

ROBERT T FRANK MD

*From the Gynecological Service and Laboratories of Mount Sinai Hospital New York*

Purely clinical investigations of the many functional conditions due to disturbances of the female sex cycle permit of numerous interpretations as to causation, very few of which it is possible to confirm by proof. With the methods devised by our group,<sup>1</sup> it has been possible to analyze the underlying hormonal disturbances. Our studies have the same application that basal metabolic tests, for example, have in the investigation of functional thyroid disturbances, or chemical studies of calcium and phosphorus in parathyroid trouble.

Our numerous previous publications<sup>2</sup> make it unnecessary to give any detailed description of the methods and technique. Suffice it to say that the female sex hormone or estrogenic substances in both the blood and urine can be determined. Similarly the anterior pituitary gonad stimulating hormones can be titrated in the blood and also in the urine. For the estrogenic substance, the vaginal spread of the castrated rat is used as indicator. For the prepituitary or prepituitary-like gonad stimulating substance, the effect produced on the ovary of the immature rat is used as a test.

By means of these methods we have now studied a large number of normal and diseased women. The object of this paper is to show some of the more striking deviations and how these determinations help in diagnosis and eventually may bear fruit in our therapeutic endeavors.

## GRAPHIC NOTATION OF RESULTS

*Blood*—Investigations are shown above the base line and represent weekly specimens of 40 c.c. of vein blood. The situation of the black dot represents the amount of female sex hormone found in 40 c.c.—0 to 2 equals 0, 2 to 4 means an increasingly positive reaction, 4 being the full reaction or 1 full MU to 40 c.c. (Fig 1).

The small circle represents the gonad stimulating prepituitary substance obtained from the same 40 c.c. of vein blood, 2 equaling a slight ovarian reaction, 4 a complete ovarian reaction (Fig 1).

*Urine*—Beneath the base line. This represents the total excretion of female sex hormone in the urine, each block representing 3 days. The numbers to the left indicate the total excretion in MU for 3-day periods. The average excretion

of a normal fertile cyclical female is between 1200 and 1500 MU monthly with two well marked periods of increased excretion the one falling about the 14th day, the other centered about the 21st day of the cycle (Fig 1) MU = Mouse Unit.

**UNOERFUNCTION**—Our studies have shown that a large group of women, which includes most of those with oligomenorrhea, amenorrhea, sterility, and dysmenorrhea, have sluggish and underfunctioning ovaries. In most instances this ovarian underfunction must be ascribed to some disturbance of the pituitary, but in the majority of cases this pituitary disturbance cannot be demonstrated.

Amenorrheas of all varieties (obesity, asthenia, so called "essential" as well as those secondary to other endocrine troubles—pituitary tumor, Simmonds's disease, Addison's disease, etc., can be divided into three varieties although clinically they appear absolutely identical. This classification is based on the amount of female sex hormone either found in the blood or excreted in the urine and the prognosis will be found proportional to the amount found, as shown in Fig 2.

The same classification applies to sterilities, after all mechanical and organic disturbances have been excluded, the likelihood of impregnation depending upon the hormonal picture.

Most of the dysmenorrheas likewise fall into the underfunctioning class, but prognostically the hormonal titer is of no help.

There is another type of amenorrhea again clinically indistinguishable from others in which continuous overfunction of the ovaries produces amenorrhea (polyhormonal amenorrhea). This variety is unusual, perhaps most often combined with polycystic ovaries, and needless to say requiring entirely different treatment than the underfunctioning type.

**OVERFUNCTION**—Overfunction of the ovaries most often documents itself by excessive, prolonged, or irregular bleeding. This classification does not apply to organic diseases due to fibroids (Fig 5) or

other tumors of the uterus, inflammation (Fig. 4), and more rarely congestive circulatory diseases, but is limited strictly to bleeding due to disturbance of the ovarian function. Our investigations have enabled us to conclude that excessive or irregular functional bleeding is due to overfunction of the ovaries.

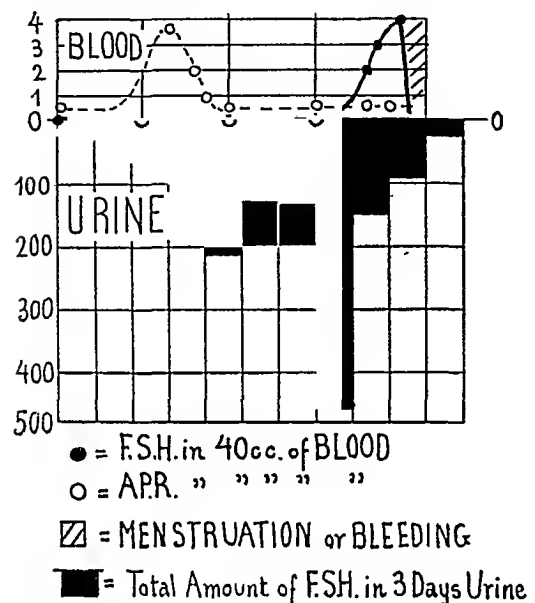


Fig. 1. Graph from normal, fertile, menstruating woman. Showing preputitary and female sex hormone blood cycle and female sex hormone excretion in the urine.

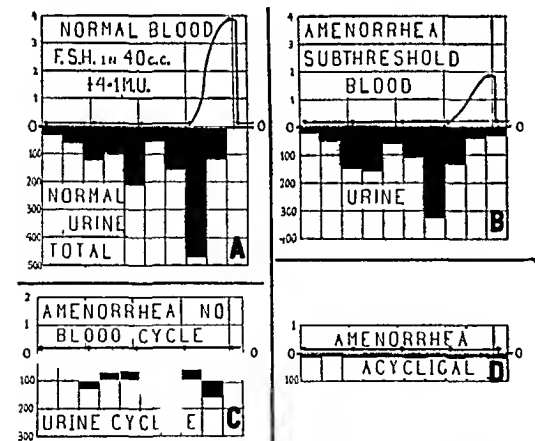


Fig. 2. Graphs showing occurrence of female sex hormone in the blood and urine of normal and amenorrheic women. A, Normal; B, subthreshold; C, negative blood cycle; positive urine cycle; D, acyclical. (Jour. Amer. Med. Assoc., December 19, 1931.)

As the blood threshold for the female sex hormone (estrogenic substance) is extremely delicate and apparently immutable, no excess in the blood has ever been encountered, the maximum being 1 M.U. in 20 c.c. of blood, which is normal for

pregnancy beyond the eighth week, and, apparently, is never exceeded, no matter how rapidly the female sex hormone is produced by the ovary. On the other hand, the excretion in the urine can reach tremendous proportions, in two instances even exceeding that normally found in pregnancy where as much as 10,000 M.U. may be excreted in 1 liter of urine.

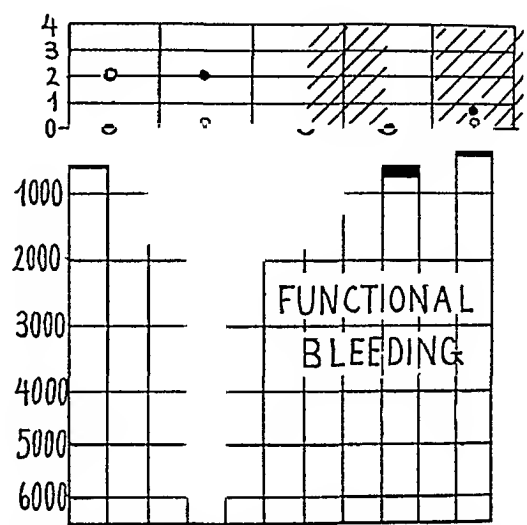


Fig. 3. Overfunction of the ovaries (functional bleeding). Showing great excess of female sex hormone excretion in the urine. 14,000 M. U. about 10 times the normal.

Therefore the typical picture in overfunction of the ovaries is a large increase of the female sex hormone in the urine which, however, may occur at regular or irregular intervals. Where, as rarely happens, the excretion is continuous and uninterrupted; bleeding does not take place, but we get what was previously mentioned, the polyhormonal amenorrhea (Fig. 3).

In very rare instances bleeding may be found in cases in which the ovaries are underfunctioning, but in our experience this has only been found when the thyroid function has been greatly diminished (minus 25 to 35).

MENOPAUSE.—Our studies of the menopause have proved of considerable interest. In the first place, removal of the uterus with retention of the ovaries may not interrupt the ovarian cycle at all as shown by the blood and urine. In one case, a normal blood cycle was found 17 years after hysterectomy. In spite of this, however, marked menopause symptoms (chiefly neurovascular) may nevertheless occur (Fig. 6).

Again it is important to emphasize that, although these patients may one and all

show the same symptoms—flushes, sweats, arthritic pains, physical and mental depression—the hormonal picture varies greatly after the ovaries have been removed and irrespective of whether the uterus is retained or not

In from 20 to 30 per cent of cases the preputitary hormone in the blood is greatly increased. In the others it is normal or diminished in amount



Fig. 4 Organic uterine bleeding—Inflammatory Very poor ovarian function

mole and chorionepithelioma (particularly in the occurrence of metastases in both male and female), but also in determining the death of the fetus when combined with our blood test,<sup>4</sup> in the diagnosis for adrenal tumor, and in some instances of pituitary diseases

As these tests are both time consuming and expensive, we have limited ourselves to cases which present special interest and

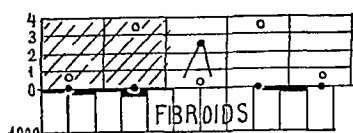


Fig. 5 Organic uterine bleeding—submucous fibroids Very poor ovarian function

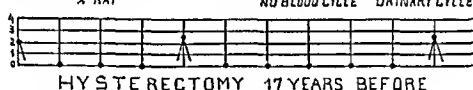
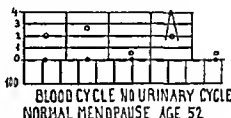


Fig. 6 Graphs of 5 menopause cases. All have severe neurovascular symptoms showing great variation of hormonal condition both of preputitary and female sex hormone

After the onset of the normal menopause, as evidenced by the cessation of bleeding, the ovarian function may continue for months or years, in a diminished fashion, just as in the amenorrheas, or may be abruptly abolished (Fig 6)

This is of importance as it readily shows why the same therapy, if there be such, may work in certain instances and fail in others

These hormonal investigations are likewise of use not only in the commonly employed pregnancy tests of Aschheim and Zondek, and Friedman,<sup>5</sup> to determine the presence of pregnancy, and also quantitatively to help in the diagnosis of hydatid

have likewise tried to apply the knowledge thus gained, to therapy

In underfunction of the ovaries, we have realized that none of the measures at our disposal, except purely hygienic ones such as reduction of weight in obesity or increase in weight and improvement in general condition in asthenia were of any use. We have so frequently seen improvement or cure of amenorrheas and sterility, observed over a long period of time, without any therapy, that we are fully convinced that the therapeutic results found so widespread in the literature are accidental or coincidental

In the treatment of overfunction of the

ovaries our therapy, on the other hand, has been extremely successful, but it has been based entirely on the well-recognized gynecological methods such as curettage, x-ray to the ovaries, in extreme cases, hysterectomy, and in the younger group of puberty bleedings, injection of minute quantities of moccasin venom (method of Peck)<sup>6</sup>.

10 EAST 85TH STREET

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### WHOOING COUGH CURED BY MUMPS

Two cases of whooping cough seemingly cured by mumps in a few days are reported by Dr. Edmund W. Klinefelter, of York, Pa., in the *A. M. A. Journal*. Three children in the same family, it seems, developed particularly severe and distressing cases of whooping cough in the last week of February. "Paroxysms were occurring from three to four times every hour." Treatment relieved the two younger children, aged 14 months and 3 years, respectively, but nothing seemed to help the oldest, a boy of 5. On March 6, the boy developed a large swelling on the right side of the face which proved to be mumps. From that day on there were no more paroxysms. Nourishment was taken without coughing or vomiting. At times there was a slight cough but no typical whooping cough. By March 12 the child was perfectly well with a normal temperature and no evidences of whooping cough or mumps. From March 6, no medication was administered.

March 9 the 3-year-old child developed a swelling on the right side of her face. Examination showed that this child also had a typical case of mumps. The temperature by rectum was 101° F. Inspection of the throat at this time did not elicit a paroxysm. With the onset of the mumps there was likewise in this case an abrupt

cessation of the coughing paroxysms. By March 10 the temperature was normal and medication was stopped. By March 17 the mumps had completely disappeared and the child was perfectly well. Neither during nor after the attack of child suffered from typical whooping cough paroxysms.

Up until the middle of May, the 14-month-old child suffered from typical whooping cough/paroxysms. From May 15 on there was gradual improvement. The intermittent administration of antipyrine, balladone, and amylal served nicely to control the cough in this child.

The doctor goes on to say that numerous cases are reported in medical literature showing that at times one disease may exert a favorable or curative influence on another disease. It has been reported that whooping cough can be checked during the eruptive stage of chickenpox. However, after the disappearance of the eruption the paroxysms again become severe. Apparently vaccinia at times exerts a favorable influence on whooping cough. Tuscherer observed two cases of whooping cough that were suddenly checked by an attack of measles. A review of the literature has shown no report of a case of whooping cough benefited or cured by an attack of mumps.

### PENS NEED SHARPER POINTS

Experts assert that there are hardly a hundred competent medical writers in our country to-day, and some authorities insist that there are hardly more than ten or twelve, according to the *A. M. A. Journal*. Yet it is a fact that in the field of medical science, many men have gained note by their ability to express themselves in

good English succinctly, rhythmically and accurately. The opportunity is available to every one who cares to take the trouble and the time to perform competently in the field of medical letters. In the field of preparation for sound literary expression, particularly, we are told, preliminary education to medical training seems to be failing miserably.



## THE LEUKOCYTES IN SKIN DISEASES

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A review of the literature leaves a rather confused idea as to which dermatoses involve changes in the white blood count. Books on hematology give findings in skin conditions which do not agree with those collected by dermatologists, and dermatologists disagree among themselves.

The author had hoped to present the results of a fairly complete compilation on this subject, which in a few diseases, included a large series of cases, but study of the figures convinced him that such a compilation was valueless.

The writer did not willingly discard his tabulations, for they represented considerable work, but conference with a statistician showed that the absence of uniform technique, the omission of data needed to properly weight the figures, and the difference in approach to the problem by different investigators, laboratory and clinical, were sufficient sources of error to make the figures meaningless.

It would be well here to contrast the older methods of classifying the white blood cells with that commonly used today, because these changes explain the difficulty encountered in trying to combine the findings reported by different investigators.

Considering only the cells present in health, the white blood cells are divided into two main groups: (1) those with hyaline, and (2) those with granular cytoplasm. In the old classifications the hyaline cells comprised the large and small lymphocytes, the large mononuclears, and the transitionals, while the granular cells included the polymorphonuclears, the eosinophiles, and the mast cells or basophiles. The modern method of grouping combines the small and large lymphocytes in one column and the large mononuclears and transitionals, now called the monocytes, in another. The polymorphonuclear cells, instead of being tabulated in one column, as was the old custom, are now split into four or five groups, arranged with reference to their maturity. At present the Schilling<sup>1</sup> hemogram has come to be generally used. Here the differential

count is recorded in columns from left to right, beginning with the basophiles, the eosinophiles, and the four types of neutrophils (the more immature forms being recorded first), then come the lymphocytes, and last the monocytes. With repeated counts tabulated in this uniform manner it is possible to determine what are called left or right "shifts" as a disease progresses, and these findings often have prognostic value. This newer classification has many advantages, but most of the literature dealing with the white blood cells in dermatoses is based on the older methods.

The technique of the differential count is not adequately standardized. It begins to vary *ab initio*. Factors which have a bearing on the results are the method of cleansing the skin, the site chosen for puncture, the number of drops discarded before choosing the one to be used for the smear, the use or avoidance of pressure in obtaining the drop, the method of spreading and drying the smear, and the portion of the smear selected for counting. In the matter of staining confusion exists. There are three principal methods: (1) the haematoxylin and eosin, (2) Ehrlich's triacid, and (3) the Romanowsky stains. The latter has several modifications (Wright, Leishman, Giemsa). A slight change in the acidity changes the staining properties so that errors in classification of cells may develop. Furthermore, supravital staining and examination of leukocytes, unstained, under the dark-field microscope seem to give results which are not in accord with those reported after examination of the dead cell.

Aside from these technical details, there are physiological variations in the blood picture, depending on such factors as the age, altitude, the hour selected for the puncture, the relation to food and exercise, menstruation, pregnancy, and possibly some others. A number of pathological conditions, some of them difficult to detect, may also affect the count.

However, this investigation has led the author to two conclusions which he wishes

to state emphatically: (1) that the differential leukocyte count is only approximate, and (2) that a single count may be misleading. If dependence is to be placed on the leukocytic picture, repeated counts must be made.

In the order which seems to be most generally accepted, the author will note the conditions in which there is more or less general agreement as to the utility of differential white blood counts.

There is first leukemia cutis. It is a proven fact that in this disease a differential count makes the diagnosis possible. However, it must be remembered that a microscopic study of the skin itself is necessary to separate the true from the nonleukemic eruption. At dermatological meetings it is not at all uncommon to have the question of an aleukemic form of leukemia brought into the diagnostic discussion. The author thinks that for practical purposes this variation can be omitted. He has never seen this condition with leukemia cutis and thinks its occurrence must be rare. There is, in addition to lymphatic leukemia, a myelogenous leukemia and possibly a rare type for which the name eosinophilic leukemia has been suggested. In none of these forms are skin manifestations common.

The second dermatosis in which valuable information may be obtained from a differential count is scarlet fever. Reference to several standard works will verify the following statements: There is always a leukocytosis with a marked neutrophilia accompanied by an eosinophilia. The finding is unique and a real diagnostic aid, for eosinophilia in an acute infection does not ordinarily appear until the stage of convalescence is in sight. In scarlet fever it is usually present early. Reduction in the eosinophile cells during the acute stage of scarlet fever is cause for a grave prognosis. However, the attending physicians at Willard Parker Hospital say that these statements are much too emphatic, that qualifying adjectives must be inserted, and that no dependence is placed on the white blood count in scarlet fever, for either diagnosis or prognosis, in the hospital which cares for New York City's contagious-disease patients.

Erysipelas is another condition exhibiting changes in the white blood cell count. There seems to be some difference of opinion, but the majority find a leukocytosis with neutrophilia and a marked shift to

the left, that is, a relative increase of the younger forms of neutrophiles as compared with the older forms. This is the expected picture in infections of an acute type, and is also found in severe pyodermas.

In chronic urticaria eosinophilia is usually present, and Hazen, in a recent unpublished paper read before the Southern Medical Association, points out that this eosinophilia is accompanied by a basophilia, which is also found in bronchial asthma. This adds further evidence to the general impression that the two conditions are closely allied and are both allergic. Hazen did not find the basophile increase in erythema multiforme, although urticaria and erythema multiforme are often thought of as closely allied conditions; nor does it occur with any constancy in eczemas due to an allergic state.

A number of writers have stated that the bullous dermatoses, especially dermatitis herpetiformis, are characterized by eosinophilia. While eosinophilia is usually present in these conditions, it is not constant and therefore cannot be depended on for diagnostic purposes. However, an exacerbation of the eruption is often preceded by an increase in the eosinophile count, and this fact may be of service in some instances.

In prurigo, a nonvesicular condition, there is also eosinophilia.

In pemphigus and in mycosis fungoides there is often an altered white cell count, but the changes are not constant and have no great diagnostic value. In a large series collected from the literature, the eosinophile count has been found to vary from zero to nearly 50 per cent. In mycosis fungoides much more dependence can be placed on the histologic findings than on the blood picture.

Efforts to separate eczema into allergic and nonallergic groups by means of differential counts seem to be unsuccessful. Hazen<sup>2</sup> notes a slightly higher percentage of eosinophiles in allergic diseases than in others, but the findings are not constant. Schamberg<sup>3</sup> found normal counts in a number of chronic, extensive, severe eczemas. He does not agree with the opinion of Canan,<sup>4</sup> the German investigator, that eosinophilia is largely proportionate to the extent, intensity, and chronicity of the skin involvement, rather than to any special characteristics of the skin eruption. Canon's opinion has been widely held by dermatologists and it may be worth while

to state that there is very little evidence to support it.

The whole question of eosinophilia seems unsettled. It occurs in prurigo and is absent in pediculosis corporis, two conditions that are highly pruritic. It is found in certain animal parasitic conditions and absent in others. Dr. Howard Craig, in a personal communication, told the author of a family of eight children, all of whom are well and have been observed for years. The four older children have lived in the tropics and all have marked eosinophilia. The four younger children have normal blood pictures. They have never been in the tropics. The older children have been exhaustively studied at the London School of Tropical Medicine without disclosing any explanation for their eosinophilia.

The eosinophile cells have been studied by many investigators in the hope of establishing their diagnostic importance. Very little has resulted. Some facts have been established but their significance is not yet understood.

The eosinophile cells belong in the granular group of leukocytes and are the most fragile of the group. They originate in the bone marrow, and when they proliferate in large numbers, bone marrow fat decreases and is replaced by cellular elements. The granules in the eosinophile cell contain iron. In certain of the anemias it is thought that some of the hemoglobin lost by the erythrocytes is taken up by the polymorphonuclear neutrophils and that this causes a change in staining qualities so that they may be mistaken for eosinophiles. Eosinophile cells tend to accumulate in the mesenteric glands during digestion and in trichinosis. They are present in large numbers in the lesions of Dühring's disease, prurigo, and sometimes in mycosis fungoides. The ingestion of camphor, cinnamic acid and iodine, and injections of tuberculin cause eosinophilia.

In an individual case there is great variation in the eosinophile count from time to time. The eosinophiles in acute infections aside from scarlet fever, are diminished or absent in the early stages and increase with the lymphocytes as improvement begins.

In spite of the negative findings reported by the older investigators, evidence is accumulating that in the chronic infections—syphilis, tuberculosis and leprosy—something may be learned at times from repeated differential counts. Thus, it is

claimed that in lupus vulgaris, lupus erythematosus of tuberculous origin, early syphilis, and leprosy a study of the monocyte-lymphocyte ratio has prognostic value. An increase in the lymphocytes and a decrease in the monocytes accompanies improvement, whereas increasing monocytosis with lymphocytopenia indicates extension of the disease. This monocyte-lymphocyte ratio is thought to bear a relation to effective treatment.

In tuberculosis neutrophilia, which always accompanies the acute miliary type, is an unfavorable finding, whereas lymphocytosis is a good one.

Eosinophilia, which may be marked after tuberculin injections, is considered a favorable finding in tuberculosis. In syphilis a sudden increase in the eosinophiles during treatment is said to precede the appearance of exfoliative dermatitis. In all of these chronic diseases monocytosis is present when the disease is active and diminishes as latency or cure approaches.

#### CONCLUSIONS

1 The differential study of the leukocytes is of limited usefulness in skin diseases. When undertaken at all, a number of examinations should be made.

2 The total leukocyte count is increased only in the leukemias, pyoderma, erysipelas, the exanthemata, the pemphigus group, erythema multiforme, and some cases of mycosis fungoides.

3 The basophiles are increased only in urticaria.

4 Eosinophilia is occasionally of diagnostic significance in scarlet fever, and is often present in urticaria, dermatitis herpetiformis, prurigo, erythema multiforme, pemphigus, mycosis fungoides, and chronic skin infestations.

5 Except in the leukemias, the lymphocytes show no marked changes in dermatoses.

6 The monocytes are increased in early syphilis.

7 The monocyte-lymphocyte ratio has a prognostic value in certain cases of tuberculosis and of leprosy.

8 The interpretation of abnormal findings must be modified to allow for physiological variations in the blood picture, and for possible undetected pathological states unrelated to the skin condition.

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## ABSTRACT OF DISCUSSION

DR. HOWARD FOX: As the speaker states, the results of leukocytic investigations in skin diseases show considerable variation. One difficulty, I think, is that these studies have been spread over too large a number of skin diseases. There has not been much intensive work, with repeated leukocyte counts on a few dermatoses, based on recent classification of these cells.

The value of leukocyte counts is either for diagnosis or prognosis, and in no case except the leukemias is this very great. The speaker says the leukocyte count has been considered helpful in the diagnosis of scarlatina, a disease whose clinical appearance is at times extremely atypical and difficult to recognize. I have also been informed that little or no attention is paid to this so-called diagnostic point at the Willard Parker Hospital. Both pemphigus and erythema multiforme show a total increase of white cells which unfortunately does not help in differentiating these affections, as at times they resemble one another closely. In regard to mycosis fungoides I think it is generally agreed, that this disease presents no characteristic blood picture, though may at the eosinophile count times be increased.

Eosinophilia, it has often been stated, is a feature of itching skin diseases in general. Schamberg and Strickler have found this to be present in over 80 per cent of cases of scabies. No one, however, would think of basing a diagnosis of scabies on the eosinophile count. There is no doubt that many cases of Dühring's disease and of prurigo show an increase in eosinophiles. As the speaker has said, eosinophilia is lacking in pediculosis corporis, which as we all know is the most pruritic of all skin diseases.

In comparing the blood changes in human and experimental syphilis, Rosahn and Pearce<sup>5</sup> found a close resemblance. In human syphilis, treatment causes a fall in the monocyte count, and a rise in the lymphocytes. The same thing happens in experimental syphilis in rabbits when spontaneous regression, without treatment, takes place.

Finally, I should like to mention the occurrence of leukopenia in lupus erythematosus disseminatus. Mook, Weiss, and Bromberg in reporting extensively on 13 cases of this disease concluded that leukopenia was an important diagnostic symptom. They stated that this had been mentioned by other writers, but that it had not been sufficiently stressed as a diagnostic point. My experience certainly bears out the contention of Mook and his coworkers in this regard.

In this age in which so much is being said about the high cost of medical care it behooves us to save our patients unnecessary expense by lessening the number of some routine laboratory procedures including leukocyte counts in diseases of the skin.

## THE MODERN PHYSICIAN'S WIFE

Being a physician's wife is really a profession in itself, although it has never been listed as such, said Mrs. J. I. Greenwell, President-Elect of the Woman's Auxiliary of the Kentucky State Medical Association, in responding to a toast at a banquet of the Kentucky Pioneer Memorial Association. It is a hard profession, too, she continued, an exacting one, in fact, a delicate calling. In this profession, we are expected to use our own mental powers and, yet, hold our tongues. Yes. We women do talk a lot. But, we never tell all we know.

Aside from our duties to God, to our Church, and other organizations, may I mention the insistent telephone and doorbell! These often call for quick thinking and sometimes I long for "second sight." Midnight calls for the doctor mean midnight calls for us, as well. Every wife must see if her hubby has his rubbers when it is raining, and his overcoat if stormy, and countless other necessities for his comfort and well-being. And, do we not assume, also, burdens of anxiety and worry over the dangerously ill patients in our attempt to lighten the load on the doctor's shoulders and show him our sympathetic interest? Stories, sentimental and cynical, have been

written about the doctor. But—where is the story about the doctor's wife? No history or glorification has been accorded the doctor's help-mate, yet, many times have her gallant service and heroic acts been the means of saving life. The doctor has been canonized on canvas and in bronze. Hospitals, parkways, boulevards, and libraries have been dedicated to him; poets and philosophers have, in rhyme and prose—sometimes in lumbering language—made him a little more than a mortal and a little less than a god. And rightly so, he deserved all the recognition we can give him for his good work. But, what of the doctor's wife? She is not written in song and story; she is not commemorated. Yet, her life, too, is consecrated to service and, inevitably, she sacrifices much, not of her personal comfort and pleasure, alone, but also the sacrifice of her husband's counsel and help so needed in the care of their own children and of their own home affairs while he attends to the wants of his patients.

Without reward, without professional recognition, the doctor's wife stands by him, and by his profession, tugging, lifting, straining, comforting, urging on higher and higher for greater service.

# UNDULANT FEVER—DIFFICULTIES IN DIAGNOSIS AND TREATMENT

## *A Preliminary Report of Fifty-one Cases*

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Westport

A small percentage of medical men recognize the true importance and prevalence of undulant fever. It is probable that only a fraction of the existing cases are diagnosed. Few communities are taking measures for its prevention. Textbooks still are publishing inadequate treatises on this subject, describing usually the cases with obvious symptoms. Diagnosis and treatment receive little attention. It is still common to hear otherwise competent physicians state that very few cases of undulant fever exist or that it is a self-limited disease, running its course in a few months or a year at most.

For years, scientific journals have been publishing occasional articles on Mediterranean fever, Malta fever and goat fever. The very titles have largely defeated the purpose of the articles since busy practitioners must necessarily omit from their reading such topics as may sound irrelevant. *B. abortus* infection in man or undulant fever would seem more descriptive, preferably the former since it covers all its manifestations. The work of Bruce, Bang, Evans, and others has been reviewed repeatedly in these articles, but little of the pressing nature of the menace of this disease has been stressed.

Since many physicians are unaware of this situation, public health measures lag.

A large city may have had a pasteurization ordinance for years, but its suburb may have continued to allow the use of raw, potentially infected milk. Physicians especially in these cities, are prone to forget that the disease exists, much less realize its constant increase.

*B. abortus* infection in cows, goats, swine, and other domestic animals has finally spread to all parts of the United States. Infected cows are disposed of by their owners and, knowingly or otherwise, are re-sold by cattle dealers in various regions, creating new foci if none already existed.

From within a radius of forty-five miles of this small rural community, 51 patients with *B. abortus* infection have consulted

the author within the past eighteen months. Some of these cases had been seen previously but had not been recognized as undulant fever. It is obvious that many other cases exist in patients not ill enough to cause them to consult a physician or in those whose symptoms have been wrongly diagnosed when seen.

The *symptomatology* is so varied that no concise description is possible. *No two patients that the author has seen have had symptoms nearly identical.* They may be so slightly ill as not to seek medical advice for years, or they may be as ill as with severe typhoid. The onset is usually insidious, giving little or no clue to the date of infection.

The usual onset, if the term should be used at all, is with fatigue, malaise, headache, and backache, which the patient (and often even the physician) is apt to ascribe to "overdoing," mild "grippe," or what not. A few patients may have no further symptoms, but repeated relapse is the rule, with more or less complete remissions. Relapses may become more and more severe, occasionally finally resulting in an acute severe illness resembling pneumonia, influenza, malaria, tuberculosis, typhoid fever, or an acute abdominal condition. In some cases the first symptoms noted are of rapid onset with high fever, prostration, and chills. Fever is usually low-grade in the mild relapses (99° to 100° F.), but it may be very high during the relapses in the severe form, ranging to 105° or even higher. Other symptoms occur in a multitude of combinations, usually the same in each relapse but sometimes with added symptoms or a totally different syndrome. Among the often encountered subjective complaints are: chilliness or chills, sweating, "indigestion," flatulence, constipation, nausea, vomiting, nosebleed, joint and muscle lameness and pain, pain in various parts of the abdomen and pelvis, pleuritic chest pain, sore throat, hoarseness, cough (usually brassy and unproductive), dysuria, loss of weight, anorexia, skin eruptions, palpitation, and dyspnea. Remissions

are often not complete, fatigue, slight fever, and vague symptoms persisting throughout the intervals between relapses. Pregnant women may abort.

Objectively little may be found, and thus a neurosis may often be suggested. Pallor when present is a striking symptom since it may occur with or without a concomitant secondary anemia. Pyuria is present in most patients presenting a urinary tract involvement. There is usually a moderate, leukopenia, with relative lymphocytosis. Dental x-rays might reveal one or more apical abscesses in otherwise healthy, vital teeth. Radiography of the gallbladder may reveal poor function in those within symptoms referable to the biliary apparatus. Myocardial involvement may be evident in old, severe infections. The spleen may be enlarged. The skin eruption when present may even suggest scabies.

It is often because of the negative findings that attention is directed toward the possibility of undulant fever. Usually what physical findings there are do not fit in with the tentative or working diagnosis. No matter what illness is simulated, careful study will result in the feeling that it is a peculiar syndrome, not actually identical with the usual picture of any illness.

In nine cases the author was asked to see the patient because the patient or family considered the illness gripe; but in every instance the symptoms were not like the usual gripe. In some, the patient was not nearly so ill, subjectively or objectively, as the height of the fever would indicate. In others the clue lay in the peculiar chilliness or mild chills, accompanied by a disproportionately low-grade fever and the profuse sweating, independent of fever. In several cases the patients remarked that it was a queer kind of gripe they were having. The cough was severe and either totally unproductive or yielding a frothy expectoration. In one patient, (C. C., age 49) seen during a relapse, the first attack of "gripe" had lasted eight weeks, the attending physician having attributed the continued fever and sweating to bronchitis, to pneumonia, and finally to abscessed teeth. Ten abscessed teeth had been extracted.

The *acute abdominal symptoms* are the most worrisome to the physician since perforated ulcer, appendicitis, acute cholecystitis, or salpingitis may be so closely simu-

lated as to make early operation seem imperative.

One such instance was a young man (E. S., age 25) who had consulted the author complaining of a typical duodenal ulcer syndrome which had been recurring for four years. Diet had been of no help. Radiographs showed a characteristic deformity of the duodenal cap. Abruptly this patient exhibited a fever of 103° F., but he was not so ill as to prevent his coming to the office with it. This suggested the advisability of a blood agglutination test, but the next day he was so acutely ill with agonizing diffuse abdominal pain and exquisite tenderness that it did not seem possible to await the blood report. Temperature ranged to 105.6° F. *Laparotomy was not done because there was no rigidity.* The blood agglutinated in a dilution of 1:200 and the attack lessened in severity. The total duration of fever was ten weeks. He had several abscessed teeth. Intravenous typhoid vaccine and intravenous neoarsphenamine had no effect. Improvement was striking following vaccine therapy, given at intervals over a period of a year. Agglutination in a dilution of 1:40 was recently reported, the titer having gradually declined throughout treatment.

*Nosebleed, frequent, profuse and recurrent,* over a period of nine years, was the complaint which brought to the office a young man of 22 (H. H.). Physical examination was negative except for a mild secondary anemia, apparently due to repeated blood loss and a temperature of 99.2° F., not accounted for. Within two weeks of this first consultation, the patient returned, complaining only of severe headache and constipation of a week's duration. Temperature was 104° F. Blood agglutination occurred in a dilution of 1:2500. Prostration, headache, backache, and high fever varied in intensity for the next twelve weeks. All his teeth were ultimately extracted because of multiple alveolar abscesses and an advanced pyorrhea. Intravenous typhoid vaccine and intravenous neoarsphenamine had no effect. Improvement has been marked following prolonged repeated courses of vaccine. Agglutination titer is now 1:40 and the patient seems well.

*Intestinal symptoms,* ushered in by a convulsion, and followed by a severe colitis (diagnosed as such) occurred in a female patient of 62 (H. M. B.), fourteen months before first seen by the author. After gradual improvement a second similar attack had occurred three months later, and again was followed by slow recovery. At that time all twenty-eight, apparently healthy teeth were found to be abscessed and were extracted, complete recovery then being predicted. Continued flatulence, constipation, meteorism, distention, recurrent faintness, loss of weight, and anorexia caused her to seek other aid, nine months after the second acute attack. Physical findings were entirely negative except for abdominal distention and low-grade fever. Radiographs showed a gas-filled, imperfectly outlined ascending colon and imperfect visualization of the gallbladder. Pallor was extreme, but there was no anemia. Blood agglutination for *B. abortus* infection was negative on two occasions. No diagnosis seemed to fit. A skin test, using the method and material supplied by Yeckel and

Chapman, was then done and was violently positive, causing lymphangitis, axillary adenitis, fever, malaise ultimate local sloughing, and marked intensification of previous and existing symptoms. The administration of *B abortus* vaccine at intervals for the past six months has been followed by apparent cure.

A *whitlike* syndrome of the rheumatoid type in a woman of 49 (J E), had followed an atypical so-called 'grippe.' Blood serum showed a trace only of agglutination with *B abortus*. Treatment using intravenous streptococcus vaccine (after Clawson and Wetherby) was followed by improvement but relapses occurred repeatedly. Subsequent blood sera agglutinated in a dilution of 1:10, 1:10 and ultimately 1:20. Constant improvement and no relapses followed *B abortus* vaccine.

*Low grade fever, pallor, and chronic nephritis* (albuminuria and casts) occurred in a female child of five (A H), whose only subjective symptom was infrequent recurrent fatigue for about a year. Two blood specimens showed no agglutination with *B abortus*. A skin test showed a delayed positive reaction at the end of seven days. All symptoms disappeared after a short course of *B abortus* vaccine. She is still well six months after termination of treatment and has gained ten pounds.

*Recurrent urinary tract infection*, with pyuria, low grade fever, malaise, headache and backache, in a woman of 31 (Mrs W S), was observed by the author over a period of eight years. Repeated cultural examination of the urine, guinea pig inoculations and cystoscopy with radiography had yielded no information. Undulant fever had not been considered. A blood agglutination with *B abortus* in a dilution of 1:10 and a week later in a 1:20 dilution recently confirmed the patient's own suspicion. Treatment with *B abortus* vaccine is being carried on, prompt improvement having followed its inception.

*Repeated spontaneous abortions* occurring in a woman of 29 (R T), who had never been acutely ill ultimately led to a diagnosis of *B abortus* infection. The first fetus, age 6 months, seen by the author was macerated, and the placenta showed macroscopic areas of calcification. The second fetus, also aged 6 months, lived a few hours. The placenta was necrotic with numerous areas filled with decomposed blood. It was inadvertently destroyed. Profuse uterine bleeding, lasting six weeks after each abortion, was terminated after curettement in both instances. Malaise, fatigue, secondary anemia and pleuritic left upper chest pain occurred at intervals, with a low grade fever. A mal-odorous, profuse, purulent vaginal discharge with right lower quadrant pain and a palpable tender tube, followed the second abortion. *B abortus* was isolated from the discharge. The blood agglutination titer was 1:160. There were several abscessed teeth and grossly infected gums. Treatment with several prolonged courses of *B abortus* vaccine and pelvic diathermy has resulted in an apparent cure after ten months. Blood agglutination last occurred in a 1:20 dilution. Cervical secretion now shows no evidence of *B abortus* on cultural examination and guinea pig inoculation.

*Headache, backache, fatigue, constipation, and*

*pelvic pain*, brought in a woman of 25 (Mrs V L) for consultation. Low grade fever was the only finding. Five blood specimens taken within three weeks showed a rapidly increasing titer: negative, trace, 1:10, 1:40 and 1:320. Apparent cure followed a short course of *B abortus* vaccine.

Diagnosis was made usually by the standard blood agglutination test. However, blood agglutination is negative in many instances early in the disease, and in a few cases, even after months or years of recurrent illness. *Low agglutination titers* (1:10, 1:20, or 1:40) are of as much diagnostic significance, in patients who present a clinical picture of undulant fever, as is the so-called characteristic agglutination in dilutions of from 1:80 to 1:2500. In the acutely developing disease, an early negative agglutination is usually followed by a steadily mounting titer within a few days or weeks. Repeated agglutination tests are essential in these cases.

In doubtful cases the skin test is of great value. It is often positive, occasionally reacting very slightly and rarely violently, in patients whose blood may show no agglutination even over a period of years. Rarely both blood agglutination and skin test may be negative in the presence of active *B abortus* infection. In these instances when diagnosis is still in doubt, a therapeutic test may be resorted to in the administration of a moderate dose of *B abortus* vaccine. A local and general reaction, with accentuation of existing symptoms, is indicative of probable *B abortus* infection.

It must be borne in mind that subsequent blood study, after skin test or administration of vaccine, may be relatively valueless since agglutinins may be so stimulated, the blood subsequently showing a low titer (1:10 or 1:20). Repeated blood study, therefore, always should precede these latter procedures.

Skin tests should not be done in patients previously treated with *B abortus* vaccine, as violent reactions and local skin necrosis may occur.

*Treatment* with *B abortus* vaccine has been the only method showing real promise in these cases. Other methods commonly suggested failed to give noticeable results, apparently having been favorably reported on by various workers after insufficient time had elapsed to determine if relapses were to occur.

Early infections appear to yield readily

to vaccine therapy. Older, chronic infections respond more slowly, but persistence in treatment is usually rewarded. Removal of accessible foci of infection, such as infected teeth, may prove essential.

In regions where the source of infection is only from cows infected with *B. abortus*, there seems no reason to use a mixed vaccine (or filtrate) of *B. abortus*, *B. melitensis*, and *B. suis*. Reactions may be unnecessarily severe. Straight *B. abortus* vaccine, prepared by the Division of Laboratories and Research of the New York State Department of Health (2,030 million killed organisms per c. c.), was employed in all cases, except one. This patient received two intravenous doses of typhoid-paratyphoid vaccine, soon after the onset of symptoms and is still well at the end of nine months.

Dosage of vaccine, frequency of administration, and total number of injections should vary with the individual case. The acutely ill patient does not tolerate any but the smallest amount of vaccine without severe or even violent reaction and should, if circumstances warrant delay, have no vaccine until the remission begins. The chronic case will tolerate an average initial dose (0.1 to 0.25 c. c.) with slight or moderate reaction. Subsequent dosage depends upon the severity and duration of the reaction from the previous dose. The interval is usually three days and not more than seven. Longer intervals often are followed by preventable relapse, at which time the administration of a slightly larger dose of vaccine (or, indeed, any dose in some instances) may precipitate extremely violent symptoms. The usual increase is from 0.05 to 0.15 c. c.

Chronic, long-standing cases may require much larger doses than the average full dose of 1 c. c.

Moderate reactions are apparently desirable, especially in long-standing stubborn cases where there may be assumed to be foci of infection in tissues not easily influenced by stimulation of antibodies.

Relapse often occurs during treatment or after it has been discontinued and is usually attended by a sharp rise in agglutination titer which subsequently falls as improvement again occurs (either spontaneously or under resumed vaccine therapy).

*Prognosis* seems excellent in early infections and apparently good in long-

standing infections if treatment is persisted in. Forty-five patients have been discharged as apparently cured after a minimum of six weeks and a maximum of ten months of treatment, and have remained well for periods up to one year. These all were patients who had relapsed frequently, over periods of from a few months to three years, before treatment was begun. Response to treatment was so uniform as to preclude the possibility of spontaneous improvement.

The remaining cases were of long standing before treatment was begun, the history in some indicating five to ten years of infection and in one of probably 19 years' duration. These patients have all improved markedly under treatment, some relapsing even during treatment, but in no case has the relapse been as severe or as prolonged as before treatment was instituted. In every case the patient reports great subjective improvement. A few of them have been under treatment for over twelve months and still show clinical and serological evidence of continued infection—but these, too, are greatly improved. There is usually a gain in weight as improvement continues.

The *criteria of apparent cure* have seemed to be: (1) clinical recovery (absence of fever, symptoms and signs over a period of months); (2) no general reaction to repeated maximum dosage of vaccine; and (3) a definitely lowered agglutination titer (usually 1:10 or 1:20, following previously higher titers). If all these conditions are fulfilled it seems justifiable to consider the patient well, but also to urge prompt return to observation at any recurrence of symptoms. Spontaneous recovery may occur in an undetermined percentage of cases.

Reinfection seems possible especially in veterinarians and others repeatedly coming in direct contact with virulent organisms.

Semi-invalidism may result in patients who are not treated successfully or in whom the condition is undiagnosed.

Statistics show a mortality of 2 to 3 per cent, perhaps reducible by early diagnosis and treatment. There have been no deaths in this series.

#### SUMMARY

A résumé of fifty-one cases of undulant fever seen in general practice is reported.

Some symptoms and signs seemingly not widely known, are mentioned. The fre-



quent occurrence of alveolar abscesses in patients with undulant fever is noted

Syndromes such as of duodenal ulcer, and cholecystitis are discussed, in cases confirmed by radiography and subsequently shown to be due to *B abortus* infection

Diagnosis in the various stages and gradations of the infection is stressed

Treatment is discussed, stressing the apparent value of *B abortus* vaccine

#### CONCLUSIONS

1 The symptoms and syndromes occurring in *B abortus* infections are manifold

2 Many cases are overlooked or wrongly diagnosed, possibly resulting in semi-invaldism or death

3 The incidence of undulant fever throughout the United States is much greater than commonly supposed

4 A negative blood agglutination does

not rule out undulant fever, early or even late in the course of the disease

5 Agglutination in a low dilution of the blood serum (1 10, 1 20, or 1 40) may occur in the presence of active *B abortus* infection early or late in the course of the disease

6 Agglutination, usually in a low dilution, may occur and persist in patients who have apparently recovered from the disease

7 Skin tests are of diagnostic value in doubtful cases

8 Alveolar abscess occurs frequently in the course of undulant fever

9 Repeated blood agglutination tests during and after vaccine therapy are of value as criteria of progress in treatment

10 Vaccine therapy, using the proper strain of organism, gives promise of cure in a large percentage of cases

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#### SMALLPOX GROWING SMALLER

There was less smallpox in the United States and Canada in 1933 than ever before, and if we may judge by the records for seven months of 1934, there will be a further drop this year, in the opinion of the *Statistical Bulletin* of the Metropolitan Life Insurance Company. These seven months not only show a new low record for the period, but report less than one tenth the number of only four years ago. The fight on smallpox seems nearly won.

Some states however, still have a bad record, for 4,589, or 75 per cent, of the 6,122 cases reported by 46 states occurred in 12 states that contain only one fifth of the country's population. Popular sentiment in these states is against vaccination.

Contrast with these ten other states and the District of Columbia, along the Atlantic seaboard, which had only 4 cases of smallpox in 1933, and only 809 in the last three years. The 12 states with high smallpox records are California, Colorado, Idaho, Iowa, Montana, Nevada, Oklahoma, Oregon, Texas, Utah, Washington, and Wisconsin. The ten states with low records are Delaware, Florida, Maine, Maryland, Massachusetts,

New Hampshire, New Jersey, New York, Pennsylvania, and Rhode Island. There is no reason to doubt that the fine record of the ten states could be duplicated by the rest of the country.

In continental Europe, where compulsory vaccination is generally accepted and practiced, smallpox has practically disappeared from all of the countries, excepting Russia and the Iberian Peninsula. In 1931 there was not a single case of smallpox reported in Belgium, Bulgaria, Scotland, Germany, Italy, Luxembourg, Norway, Sweden, Switzerland and Yugoslavia. Only one case each was reported in the Netherlands and Latvia, 5 in Finland, 12 in Greece, 13 in Roumania, and 14 in Poland. France, with a population of over 40 millions, reported only 162 cases.

In England and Wales, on the contrary, where since 1907 'conscientious objectors' have been exempt from compliance with the vaccination laws, the incidence of smallpox has reached such proportions that in 1931 there were reported 5,665 cases, a number far in excess of the total number of cases reported by the whole of continental Europe, excluding Russia.

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Normal babies should double their birth weight in five months, physicians say, but the Dionne quintuplets, premature by two months, have done far better than that, according to a report in the New York Times. On their five months birth

day all five sisters were more than four times as heavy as when first accurate weights were taken. Their total weight then was only 10 pounds, 1¼ ounces. At the end of five months it was 45 pounds, 10 ounces.

# TISSUE REACTIVITY TO STREPTOCOCCI AND ITS BEARING UPON THE PROBLEM OF ARTHRITIS

CHARLES H. HITCHCOCK, M.D.

*Syracuse*

The treatment of rheumatic diseases has long been a problem to tax the ingenuity of the profession. Much good has been accomplished by the removal of obvious foci of infection, together with the exhibition of antirheumatic drugs and the adoption of measures designed to promote the general health of the patient. Often enough, however, the disease has progressed to varying degrees of permanent crippling before finally becoming inactive. Such results, particularly when affecting those in the earlier decades of life, are deplorable in the extreme, and any method which might offer hope of their prevention would, if proved efficacious, be of considerable value.

The problem of rheumatic diseases has been approached from many different angles, and frequently the experimental results have conflicted to an extreme degree. One need only mention, for example, the inability of most trained investigators to confirm the claims of Rosenow regarding the arthrotropic properties of certain strains of streptococci, or the conflicting results which are still being reported with respect to the incidence of positive blood cultures. In general, however, it may be stated that the evidence which is slowly accumulating stresses with increasing emphasis the rôle of the gram-positive cocci, and particularly of the streptococci, in etiology. By some investigators it has been considered that certain strains of these organisms are specific for these diseases;<sup>1,2</sup> other workers have either been unable to confirm their results, or have placed different interpretations upon them.

Whether or not specific cocci are concerned, the mode of production of the lesions remains unexplained. Histologically they bear little resemblance to those of ordinary streptococcal infection. This aspect of the matter has recently been subjected to intensive study by workers at the Rockefeller Institute in New York. The problem has been approached by investigating the systemic effects of low-grade

focal infection. A brief description of the results is necessary, in order to clarify the scientific background for the therapeutic measures later to be described.

The repeated intradermal injection of living nonhemolytic streptococci into rabbits results eventually in the appearance of a condition of systemic sensitization to the organism.<sup>3</sup> It is, however, necessary that the injections be properly spaced, and that the doses be not too large.<sup>4</sup> Furthermore, the animal must be treated via the intradermal, subcutaneous, or intramuscular route; intravenous injections have a totally different effect.<sup>5</sup> Roughly it may be said that the repeated intracutaneous exhibition of these small doses, which need not exceed 0.001 c. c. of culture, is an attempt to reproduce in the rabbit the type of low-grade infection, with streptococci of slight virulence, which is present in human foci of chronic infection. Under these conditions, sensitization to the organism is detectable within two weeks, and after two to three months of continuous treatment reaches a very high level, at which it may be maintained indefinitely. The sensitivity may be detected in several ways: namely, by greatly exaggerated tissue reactions when tiny quantities of culture (e. g. 0.000,001 c. c.) are injected into the skin;<sup>6</sup> or by the production of fatal shock by intravenous injection of culture in amounts innocuous to normal animals. This condition is not anaphylactic in nature, nor is it dependent upon the presence of antibodies in the serum.<sup>7</sup> It resembles rather the sensitivity to tuberculin which develops in the tuberculous animal. Furthermore, it is not strain-specific; that is to say, an animal, after receiving intensive treatment with one strain of streptococci, will thereafter show phenomena of sensitivity, no matter with what strain of streptococci it be tested. This is a point of considerable importance.

Let us turn now to the *clinical side*. It has been found that certain groups of hospital patients display a definite sensitivity to streptococci or their products when tested

by intradermal injection of appropriate quantities of vaccine, or of nucleo-protein. This reactivity is in no way comparable to the Dick test. It occurs following recent infection with hemolytic streptococci,<sup>8</sup> and in addition it is found in rheumatic fever,<sup>9</sup> glomerulonephritis,<sup>10</sup> and so-called "rheumatic" iritis.<sup>11</sup> It is present also to a moderate degree in infectious arthritis, but tends to be weaker in the less acute cases and in those of longer duration. Skin sensitivity alone, however, is not conclusive proof of activity of infection. Let it be remembered, for example, that the intradermal tuberculin test may remain positive after any detectable sign of tuberculous activity has vanished.

There is, however, another method for detecting the sensitivity of infection, namely, the production of systemic reactions. The sensitive rabbit, treated intravenously with a certain amount of streptococcal culture, succumbs within 48 hours, and at autopsy there is evidence of wide-spread endothelial damage. When nonfatal doses are employed, there may be evidence of heightened inflammatory activity in lesions recently produced. Similarly, the tuberculous animal, subjected to excessive doses of tuberculin, dies with marked inflammatory and hemorrhagic reactions about his tuberculous foci. Clinical experience has taught us the ease with which, in human beings, careless use of tuberculin may result in pronounced febrile reactions, with markedly increased activity in the tuberculous lesions, sometimes with disastrous results. These are examples of the induction of focal and systemic reactions in the sensitive animal or patient and are dependent not only upon previous exposure to the organism, but also upon the presence of active or recently active infection.

In a similar manner, focal and systemic reactions may be provoked in sufferers from rheumatic disease, merely by the introduction into a vein of a small dose of streptococcal vaccine.<sup>12</sup> The reactions are evidenced by fever, appearing within a few hours, reaching its peak in from 24 to 48 hours, and then subsiding within a few days, also there was increased swelling and discomfort in joints, and, in the presence of carditis, there occurred gallop rhythm and changes in murmurs. These phenomena are most easily provoked by the use of hemolytic streptococci. The effective dose varies from 10,000 to 500,000 organisms depending roughly upon the severity and

activity of the infection. Conversely, it may be stated that in the absence of recent infectious activity, doses ranging into the millions may be administered without provoking more than the mildest symptoms.

Here, then, there is a condition of focal and systemic sensitivity to streptococci, which up to date has been described only for rheumatic fever, infectious arthritis, and glomerulonephritis. Certain cases occurring in the author's private practice would seem to indicate that eventually "rheumatic iritis" will be added to the list. In other conditions in which skin sensitivity to streptococci is present this more generalized type of allergic reaction cannot be elicited,<sup>13</sup> and it may therefore be considered as peculiar to the small group of conditions listed. Interestingly enough, it is within this same group that etiological relationship to foci of chronic streptococcal infection has been most strongly indicated upon other grounds.

The existence of this allergic condition having been demonstrated it cannot, unfortunately, be concluded that therewith the whole problem of etiology has been solved. Certain points, however, become more susceptible of explanation. Thus, in the case of rheumatic fever, it has been noted by many observers that the streptococci occasionally isolated are serologically quite unrelated, in fact, two or more totally different strains have at times been isolated in succession from the blood stream of the same individual.<sup>14</sup> Furthermore, the isolations have mostly been nonhemolytic streptococci whereas epidemiological, clinical, and immunological data associate this disease very definitely with *Streptococcus haemolyticus*.<sup>15</sup> At least a partial reconciliation of these difficulties is found in the fact previously mentioned, that in the laboratory animal the allergic state, once highly developed, is not strain specific but can be detected by the use of any streptococcus, regardless of resemblance or lack thereof to the parent strain. The same thing is true in the patient—he reacts to products of hemolytic, green producing, or indifferent streptococci, although most vigorously to those of hemolytic streptococci. It may then be considered, tentatively, that the more virulent hemolytic streptococcus is the primarily infecting and allergizing agent, while the less virulent *S. viridans* and indifferent types assume subsidiary roles once the soil has been prepared.

The allergic hypothesis is of further

value in explaining the extent of the lesions which are found in the more severe cases. At present there is no universally accepted belief in the existence of a constant or severe bacteremia in the rheumatic state. If it be granted that bacteria reach the blood at all, it is probably in small numbers and at irregular intervals. Ordinarily, a few organisms distributed in this manner would be rapidly and efficiently destroyed. However, it has been shown that in the sensitized animal a tiny dose of living bacteria—perhaps as few as 200 or 300 cells—is capable of producing a lesion of a size which in the normal animal, would necessitate the use of at least a thousand times that amount of culture. Comparable conditions presumably exist within the sensitized human being; and, if this be the case, it becomes clear that even an occasional mild bacteremia might easily produce a rather marked tissue reaction. By this is not meant, however, that sensitivity is the *only* factor in the production of rheumatic lesions. It is safe to say that, in spite of a vast amount of experimental work, no one has successfully reproduced in experimental animals lesions histologically typical, for example, of rheumatic fever. It is true that streptococci, from whatever source, will, if used in sufficiently large numbers, eventually produce destructive lesions in the joints of rabbits, dogs, and other animals. Similar lesions may be produced by the repeated injection of small amounts of horse serum into the joints of allergic animals,<sup>16</sup> so that it would seem probable that any irritant, repeatedly injected into a joint, might eventually produce comparable changes. What may be the nature of the irritant operative in the human patient is at present obscure. It seems safe to say, however, that it seldom if ever manifests itself in the nonsensitive patient. In other words, the condition of allergy to gram-positive cocci, and especially to streptococci, is probably an important background for the development of the rheumatic state; and in its absence, such other factors as may be necessary for the production of its peculiar pathological picture are unable to function to that end.

If this be so, it is reasonable to suppose that removal or lessening of the condition of sensitivity might retard the progress of the disease and perhaps lead to its amelioration. The clue to the procedure to be followed must be secured from the laboratory.

It will be recalled that, in discussing the artificial production of sensitivity in animals, the fact was emphasized that cultures must be injected into *tissue*, preferably intradermally. If the intravenous route be employed, no sensitization results, but rather a condition which has been termed "tissue immunity," which in many respects is diametrically the opposite of sensitization. Also, one must not forget that the intravenous injection of sufficient culture into the sensitized animal usually leads to death in shock. It has been found, however, that if very small doses of culture are employed, avoiding shock, and if these are injected intravenously at proper intervals over a sufficient period of time, the condition of sensitization may be removed, and the animal then exhibits the same condition of "tissue immunity" as does the normal animal treated from the beginning by the intravenous route. Such intravenous desensitization is most effectively carried out with the homologous sensitizing organism, though a certain degree of success may be attained by the use of a heterologous strain.

This procedure may be applied to the allergic patient. In discussing the distinction between dermal and systemic allergy, it was pointed out that, in the presence of the latter condition, intravenous injection of a properly chosen vaccine would result in focal and systemic reactions. If the injections are repeatedly made, however, with a constant dose of bacteria, these reactions become progressively lessened in severity, and finally fail to appear. They may then, however, again be elicited by increasing the dose of vaccine. By persistent application of this procedure, it finally becomes possible to carry the intravenous desensitization of the patient to the point where he will tolerate without reaction many times the dosage of vaccine which, in the beginning, caused him severe discomfort.<sup>17</sup> Coincidentally, great amelioration and sometimes complete abatement of symptoms are noted.

It must be emphasized at once that intravenous desensitization is not a procedure which can be indiscriminately applied, and that under certain conditions it is difficult to carry out. These conditions pertain to the presence of untreated foci of infection. In the sensitized animal, the introduction into the tissues of an infected agar focus renders subsequent attempts at intravenous desensitization much less easy of accom-

plishment Following its surgical removal, the animal becomes more amenable to the procedure. Similarly, it has been found that in the human being, the persistence of untreated or inadequately treated infectious foci adds greatly to the difficulties of intravenous therapy. Such foci must, therefore, be dealt with before institution of biologic measures. To one experienced in vaccine therapy, it is usually possible to decide from the patient's reaction to the initial doses of vaccine whether or not undetected and undrained foci still persist. Likewise, the sudden appearance of intolerance to vaccine, in patients whose previous progress has been satisfactory, has in the author's experience been indicative of the need for renewed attention to some known focus as, for instance, a chronic sinus infection. Fellowship between the internist and the surgical specialist is obviously, then, quite indispensable.

In actual practice, one attempts so to grade the dosage in intravenous desensitization therapy as to avoid focal reactions. This is particularly the case when dealing with ambulatory patients. Such reactions are unpleasant and may at times be of some duration, their net effect is usually to retard greatly the rate of recovery. It is necessary, then, to begin with a dose so small that freedom from reaction seems relatively certain. Often this means an initial injection of a vaccine containing only a few thousand, or even a few hundred, bacteria. Sufficient time must be allowed between treatments to preclude the appearance of a late reaction, for this, five days seems to be the minimum. The dose is carefully raised until an effect is apparent. If this is favorable, the dosage is held at this level and is only very gradually increased. If, however, an unfavorable reaction appears, with exacerbation of symptoms, the dosage is greatly reduced, and then increased with greater caution. As greater amounts of vaccine are administered, longer intervals may be allowed to elapse between injections. It is impossible in a short paper to give exact details of dosage, both with respect to the initial quantity, and the rapidity with which this may be increased. Much, which can be learned by experience only, depends upon the acuteness of the condition, for the more recently an acute flare-up has occurred, the smaller must be the initial dosage of vaccine, and the greater the caution necessary while increasing it.

The question remains as to just what organism should be employed in carrying out an intravenous desensitization. This is a matter as to which there is as yet no unanimity of opinion. Naturally, one would wish, if possible, to utilize the strain directly responsible for the sensitization. When it is considered, however, that it is quite possible for various strains at different times to play a part in maintaining the allergic state, the detection of the offending organism becomes a rather formidable matter. Certain methods have been proposed, which, unfortunately, require for their execution the expenditure of considerable time on the part of a trained laboratory assistant. Such methods are therefore out of reach of most of us. Furthermore it is not finally established that their use is essential to success. The implication by many observers of the hemolytic streptococcus as the primary bacterial excitant leads to the suspicion that this organism is also the primary allergizing agent. If this be so the use of a suitable chosen stock strain in the preparation of vaccine for desensitization might be justified. The employment of such a stock strain—a hemolytic streptococcus originally isolated from the tonsil of a boy suffering from severe rheumatic carditis—has in the author's experience and in that of others proved beneficial to the majority of patients. Skin tests are first made with measured amounts of this vaccine. In this way a rough idea of the degree of sensitization is secured and some indication of the size of the allowable initial dose is afforded. Carefully graded injections are then given at five- to seven day intervals as previously described. At times, particularly when dealing with active rheumatic fever, it is found advantageous to keep the patient under the influence of an antirheumatic drug during the first part of the course. Such drugs are of considerable value during the period when severe reactions are to be expected, as they have the useful property of minimizing or even inhibiting them entirely. With progressive improvement, the dosage of the drug may be diminished, and finally it may be withdrawn with entire safety.

Desensitization therapy is not, of course, a cure-all. Employed in accordance with the principles enunciated in this paper, it forms a useful adjunct to present methods of treatment, but cannot entirely supplant them. When so employed, and patiently

persisted in over a period which may extend to many months, we may believe, from the gist of clinical reports which have appeared to date,<sup>17, 18</sup> that such therapy will be found of considerable value in increasing the percentage of favorable results.

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204 MEDICAL ARTS BLDG.

## DISCUSSION

DR. WILLIAM B. RAWLS, *New York City*: Dr. Hitchcock has presented a very interesting paper and I thoroughly agree with his major points. However, there are a few minor statements which require amplification. I agree with him that the exact pathogenesis of rheumatoid arthritis is still obscure but it is the consensus of opinion that the disease is probably streptococcal in origin, although no one strain or type of streptococcus can be said to account for all cases. We have often found as many as three or more serologic variants in the same patient.

Dr. Hitchcock stated that the phenomenon of hypersensitivity is most easily provoked by hemolytic streptococci. Some recent immunologic investigators have shown that certain reactions with hemolytic streptococci do not occur with patients having rheumatoid arthritis. Our studies would indicate that the cause of this misunderstanding

can be traced to the method of determining hemolysis. Most of these arthrotropic strains produce hemolysis of a suspension of red cells or of the surface of blood agar plates. However, in deep blood agar plates (as pointed out by Brown) some of these hemolyzing strains are of the alpha or alpha-prime type. The green pigment is pronounced in deep or anaerobic cultures, whereas it is almost absent in surface colonies. The strains are, therefore, not hemolytic streptococci but *S. viridans*.

We have confirmed the conclusion of many others that intradermal tests are not as reliable as they were formerly considered. We have discarded their use in our clinic in favor of more specific tests.

Since Swift and Hitchcock showed that repeated small intravenous doses tended to desensitize and, believing that arthritis was best explained on an allergic basis, we began in 1930 to administer vaccines intravenously and to date have treated over 500 patients by this method. A large percentage of our patients have been treated with autogenous vaccines prepared from cultures of various foci.

Our doses of vaccine have been considerably smaller than those advocated by Dr. Hitchcock and others. Two explanations are possible: (1) Our vaccines are phenolized unheated suspensions of toxic strains while theirs are perhaps heated, unselected strains. (2) Although the disease may not be caused by a specific strain, the specially selected autogenous organisms are more likely to be specific and the dose must, therefore, be smaller. The effective dose is inversely proportional to the specificity and toxicity of the vaccine and to the acuteness of the disease. Whatever the type of vaccine, there can be no fixed schedule but the dose must vary from time to time according to the patient's reaction, an effort being made at all times to avoid focal or general reactions. This is extremely important as an overdose of vaccine may retard the patient's recovery for a considerable time and even confine him to bed for weeks.

The desensitization must be carried out over a long period of time and with the utmost care. In the presence of active foci of infection, a patient will get a reaction from minute doses of vaccine. If, after several injections, severe reactions still occur, a focus of infection probably exists and should be sought carefully. After removal of a focus of infection, the vaccine can usually be increased much more rapidly. If a patient is progressing favorably and then suddenly begins to experience reactions even though the dose of vaccine has not been increased, it is likely that he has developed another focus of infection. La Grippe or other intercurrent infections must be ruled out as they may produce the same phenomenon. In an analysis of 200 cases we have noted that about 10 to 20 per cent have shown definite improvement following removal of foci and another 5 to 10 per cent have shown temporary improvement. Not more than 25 per cent of patients with typical rheumatoid arthritis showed improvement after removal of foci, whereas with a combination of vaccine therapy with removal of foci improvement was obtained in 60 to 75 per cent.

Following the removal of foci, there frequently are periods of remissions and exacerbations and,

if vaccine treatment is instituted without delay, there is a greater probability for cure. On the other hand, if this is neglected, in a large percentage of cases the periods of remission gradually become shorter and the periods of exacerbation become longer and more severe until rheumatoid arthritis becomes well established.

We have found intravenous vaccine therapy more satisfactory than any other single method of treatment in rheumatoid arthritis. It does not preclude, however, the use of all the adjunct measures at our command, but it should be the basic treatment. For the past 20 months in our

clinic, we have been doing sedimentation rate determinations and nuclear counts regularly every two or three weeks on every patient getting vaccine treatment. In a recent publication we have shown that these two tests are reliable indices for determining the activity of the arthritic process. If the general trend of the sedimentation rate and nuclear count of each patient is noted over a period of months, in a large percentage of cases there will be observed a very definite reduction in both tests in patients who have had no other treatment and who have had no foci removed for a considerable time before vaccine treatment.

## CASE REPORT

### PERNICIOUS ANEMIA IN A NEGRO

NORMAN STRAUSS, M.D., F.A.C.P.

and

THOMAS F. V. LA PORTE, M.D.

*From the Third Medical Division, Morrisania Hospital, New York City*

True pernicious anemia occurring in a negro is very rare. Because of the rarity of this combination we wish to record the following authentic case.

As evidence of the infrequency of occurrence of pernicious anemia in negroes it is of interest to note that of the 8,527 negro patients treated at the Morrisania Hospital since its opening five years ago there is no similar case recorded.

According to Evans,<sup>1</sup> pernicious anemia is very uncommon in negroes. Only 9 of the 578 cases of pernicious anemia admitted at Johns Hopkins Hospital from its opening until December 31, 1922, were negroes. These 9 cases occurred among 34,280 negro admissions during the same period.

Osler<sup>2</sup> makes no mention of the occurrence of this disease in negroes.

Davidson and Culland<sup>3</sup> in their book on Pernicious Anemia state: "It is doubtful if the disease ever occurs in full-blooded negroes."

Cornell<sup>4</sup> quotes: "From the experience of Longcope of Baltimore and of others, pernicious anemia seldom if ever occurs in a full-blooded negro."

J. B., colored, male, was born and always lived in New York City; his age is 48; he was admitted to Morrisania Hospital, February 8, 1934, and discharged March 29, 1934.

**Chief complaints** on admission were weakness, loss of appetite, nausea and vomiting, coldness of legs.

**Present illness.**—The onset dated approximately one month prior to admission. The patient noted that he was unable to perform his usual tasks without becoming markedly tired. With this onset of weakness he began

to lose his appetite. He had lost about 15 lbs. in weight during the past 6 weeks. Concomitant with the above he experienced intermittent attacks of epigastric distress associated with nausea and vomiting. During the past 4 to 5 weeks he was frequently troubled with tingling, prickling sensations and numbness of the toes and fingers and coldness of both lower extremities. He also complained of frequent attacks of diarrhea during the above period of time.

**Past History.**—Certain salient features are of interest. In 1929 he entered another institution with similar complaints. Because of the predominance of gastric symptoms an exploratory laparotomy was performed but no pathology was found. (We obtained this record from the hospital in which he was operated upon.) In 1932 he had a similar bout of symptoms and returned to the same institution. This time he was treated medically and was discharged as improved after a month's stay in the hospital. He had no venereal diseases.

**Physical examination** on admission showed a slightly emaciated adult colored male, lying quietly in bed and not appearing acutely ill. The pupils were both equal, regular, and reacted to light and accommodation. Sclerae had a slight icteric tint. Conjunctivae were markedly pale. Mucous membrane of mouth was also markedly pale. *The tongue was very smooth, pale, and showed atrophy of the papillae.* Teeth showed pyorrhea, alveolaris. There was visible pulsation of the vessels of the neck. The lungs were clear and resonant throughout. The heart was not enlarged to percussion. Sounds were of weak muscular quality. There was a systolic

murmur at the apex, not transmitted. The liver and spleen were not palpable. No ascites or masses palpable. No tenderness. An old laparotomy scar was present in the epigastric area. The extremities, both upper and lower, were emaciated. The nail beds were very pale. The knee jerks were absent. Bilateral Babinski with confirmatories were present, more marked on left. Vibratory sense was absent. Abdominal reflexes present.

**Laboratory Reports.**—The urine was negative except for a faint trace of albumin. The stools were negative for blood and parasites. The blood Wassermann and Kahn tests were negative, the spinal fluid Wassermann negative.

The blood count showed hemoglobin 36 per cent by Sahli, red cells 1,600,000, color index 1.1, white cell count 4,600, with neutrophils 73 per cent, lymphocytes 27 per cent, eosinophiles none. Platelets were 90,000. The blood smear, Giemsa stain, revealed marked poikilocytosis and anisocytosis. Many macrocytes were present, but no nucleated red cells were seen.

Gastric analysis yielded no free hydrochloric acid in fasting contents nor in five fractional specimens taken at fifteen-minute intervals after alcohol test meal. Total acidity ran low, 4 in fasting specimens and after meal 5—4—6—6—10. There were no lactic acid, no blood, and no Boas Oppler bacilli.

The diagnosis, thus far, rested on the asthenia, gastro-intestinal symptoms and achlorhydria, the neurological symptoms and signs, the glossitis atrophica, and the characteristic blood picture.

The course of the disease under liver therapy furnishes further proof of the diagnosis. Daily intramuscular injections of 3 c. c. of liver extract (equivalent to 100 gm. of fresh liver). Diet as suggested by Minot and Murphy with liver, beef or lamb kidney for breakfast, dinner, and supper, was given. Dilute hydrochloric acid and ferric ammonium citrate were also given. The following table shows the characteristic response in red cells, haemoglobin and reticulocytes.

TABLE I

Dates	Red blood count	Hemoglobin	Reticulocytes, per cent
February 8, 1934...	1,600,000	36 Sahli	0
February 10, 1934...	1,780,000	37 Sahli	2
February 12, 1934...	1,800,000	38 Sahli	3
February 18, 1934...	1,900,000	39 Sahli	7
February 21, 1934...	1,940,000	39 Sahli	15
February 27, 1934...	2,160,000	40 Sahli	17
March 5, 1934...	2,800,000	43 Sahli	12
March 11, 1934...	3,250,000	52 Sahli	5
March 17, 1934...	3,900,000	58 Sahli	4
March 20, 1934...	4,100,000	62 Sahli	2

With the blood improvement went a corresponding change for the better in all symptoms. Weight increased from 99 to 115 lbs., gastric symptoms disappeared, paresthesias were greatly improved.

2701 GRAND CONCOURSE

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## HEALING ON THE WINGS OF THE WIND

Nowhere have the airplane and the radio proved greater boons to the sick than in the great stretches of wilderness in lands like Australia. Not long ago, for example, as reported by the London correspondent of the *A. M. A. Journal*, a woman in a cattle station hundreds of miles from the nearest township was suddenly taken ill. Within thirty-six hours she had been taken 700 miles to a hospital in Camooweal.

This feat was accomplished by the aid of wireless and airplane. When it became apparent that the illness was serious, a girl motored 70 miles to another cattle station, which is equipped with one of the mission's pedal transmitter wireless sets. These sets are an Australian invention and are so simple that no training is required to use them.

A message describing the woman's illness was tapped out on a device like a typewriter, operated by pedals like those of a bicycle. As the operator spelled out each word it was converted into Morse by the machine and automatically

transmitted by wireless telegraphy. The message was picked up at the mission's chief country center at Cloncurry, North Queensland.

A few minutes later listeners at the cattle station heard the voice of the "flying doctor," Dr. J. M. Rossell, asking for more information about the woman.

This was again spelled out on the pedal transmitter. An airplane with a pilot and the doctor on board left Cloncurry for the station where the woman was ill.

On arriving the doctor attended to the patient, placed her on a stretcher in a special compartment of the airplane and flew with her to the hospital at Camooweal, where the operation was performed.

The Australian Inland Mission has twenty wireless sets of the pedal transmitter type at key positions in Northern Australia. This particular airplane has flown more than 100,000 miles for the mission without a serious accident, a remarkable performance considering that it mostly has to land on rough station paddocks.



## CASE REPORT

## SKIN DIPHThERIA

LEGRAND A DAMON, M D

*Pathologist, Craig Colony, Soneya*

Diphtheria of the skin is of such rare occurrence as to warrant the report of a case which occurred at Craig Colony. In reviewing the literature I find that its incidence is less than 1 per cent of the clinical bacteriological cases of diphtheria reported. The bacillus gains entrance to the skin usually through excoriations, erosions, or any of the lesions that will break its continuity. It may be either primary or, as is usually the case, secondary to lesions in the larynx, throat, or

March 4th it had spread to the chin and forehead and nearly completely surrounded the mouth. At this time she was placed in bed, and in order to prevent further excoriations the hands and arms were secured in splints. The eruption resembled impetigo in that there was considerable crusting with profuse purulent discharge. Her temperature varied from 99.8° to 101° F., the latter being the highest point that was reached at any time. The pulse rate was, however, very



Fig. 1



Fig. 2



Fig. 3

nasal mucous membranes. It may take several different forms. The ulcerative type in which there is a tendency to the formation of a membrane, the gangrenous type with extensive destruction of tissue, and another type which resembles various dermatoses such as eczema, impetigo, or ecthyma. Not infrequently diphtheria bacilli are implanted in wounds. Before the discovery of antitoxin there were several cases reported of skin infections in tracheotomy wounds. During the World War a few cases occurred in gunshot wounds.

This patient, Margaret B., age 15, was admitted to Craig Colony, Nov. 11, 1930. Nothing in the history of her epilepsy or previous health had any bearing upon her present illness. On February 20, 1931, she developed a pustular eruption on the left side of the face near the angle of the mouth and the left nares. The lesion was accompanied by more or less itching and she persisted in rubbing and scratching the area thereby causing the infection to spread more or less rapidly. By

significant being invariably from 108 to 130. From this date and until March 27th, a period of three weeks, various local applications including ammoniated mercury, S. T. 37, compound tincture of benzoin, and mercurochrome were used and salicylates and Fowler's solution given internally. There was a gradual spreading of the infection in spite of all forms of treatment. She was observed by nearly all the members of the Colony staff and they were quite agreed as to the diagnosis of impetigo contagiosa. Because of the fact that the usual remedies employed seemed to be of no avail and with the idea in mind of making an autogenous vaccine, several cultures were made on March 27th. Much to our surprise, and probably chagrin, a pure culture of diphtheria bacilli of a virulent type was found. Positive identification of the organisms was made both by staining and cultural characteristics, also the organism was found to be virulent by guinea-pig inoculation and was recovered in pure culture from the dead animal. If any doubts as to

the identification of the organism remained, these were at once dispelled by the clinical improvement which promptly followed the administration of 10,000 units of antitoxin. Within forty-eight hours the induration and redness were subsiding and after four or five days the crusts began dropping off leaving a dark red scar, the latter indicating that true skin had been involved in the pathological process. At the end of a week a second dose of 10,000 units was administered. I might state at this time that although repeated cultures were taken from the throat and posterior nares, at no time were diphtheria bacilli isolated nor did she at any time present symptoms of laryngeal involvement.

Since the true nature of the infection was discovered, photographs were made and at fifteen days' intervals thereafter. Figure 1 shows the lesions at their height. Figure 2 taken fifteen days later shows almost complete disappearance following use of antitoxin. Figure 3 shows scarring which resulted and which persists to some extent at the present time three years later.

My chief reason in reporting this case is to bring to your attention the possibility of diphtheric infection of the skin and to emphasize the importance of making bacteriological cultures on lesions which do not readily respond to the usual form of treatment.

### ON RECOMMENDING DRUGGISTS

The success or failure of a medicine may rest in the hands of the chemist who compounds the prescription, and it is a serious question whether the physician should not try to safeguard the patient by guiding his steps to a pharmacist whom he knows to be reliable and skilful. Not all will agree on this, of course, but a medical man writing in *Medical Economics*, Dr. L. J. Sokol, believes that the doctor should either compound his own prescriptions, have them compounded by a chosen pharmacist, or specify several druggists by name as reliable. Most doctors may object to the last alternative, he thinks, but he argues that to specify three or four druggists does not imply the forcing of these druggists on the patient. Most patients you meet are reasonable people; you can talk to them; and if your arguments are sound, they will in all likelihood follow your advice.

After all, you are looking out for the patient's good. Surely it is not too much to ask of the man who has just submitted to treatment at your hands, that he conclude the treatment according to your advice.

In the last analysis, it is the prescribed medicine that will cure him. It is, therefore, of vital

importance that that medicine be exactly what you ordered. The dullest patient will agree that it is futile to attempt a cure with incorrectly followed orders.

You will get the best results by being entirely frank with the patient. Tell him that you are advocating certain pharmacists because you have found them to be reliable and expert. Explain, if it seems necessary, that there is no "bonus" attached in this for you.

Confide in the patient and in his native ability and intelligence to understand you. It is remarkable how easily a matter like this can be explained in a few moments' heart-to-heart talk.

Some practitioners use Rx blanks printed on paper carrying a druggist's letterhead. This is convenient and does well enough in communities where one or, at most, a few outstanding pharmacies are known to the public; but it may seem ill-advised in cosmopolitan areas where there are drug stores on each block.

Whichever method is used, one thing is certain: No conscientious doctor must allow his patient to depart with a prescription without advising him of a good place to have it filled.

### BOGUS "WARM SPRINGS CHRYSTALS"

One man has been sentenced to a year in Federal penitentiary and two others are awaiting trial on a charge of conspiring to violate the Federal Food and Drugs Act, by advertising and selling "Warm Springs Chrystal Compound" as coming from the springs of that name in Georgia. As a matter of fact, the "chrystals" did not come from that source at all, but were simply a laxative, composed of Glauber's salts, similar in action to Epsom Salts. The "chrystals"

cost only a few cents a pound; they were sold for a dollar a pound.

Quantities of this compound were seized, because of misbranding under the Food and Drugs Act, at the instance of the Food and Drug Administration. The seizures were made at El Paso, Texas; Oklahoma City, Oklahoma; Los Angeles and San Francisco, California; Louisville and Paducah, Kentucky; Cincinnati, Ohio; and Shreveport, Louisiana.

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## EDITORIALS

### Dr. Wendell C. Phillips

Organized medicine mourns the loss of a leader. Dr. Wendell C. Phillips is dead.

Joining our ranks in December, 1882, his interest and ability became evident and in 1904 he was President of the Medical Society of the County of New York, then President of the Medical Society of the State in 1911, and he reached the Presidency of the American Medical Association in 1926. In the intervals between the periods when he held executive positions, he filled various chairmanships, and was a Trustee of the American Medical Association. The medico-political career outlined in this sketch of commanding official positions hardly indicates the extent of his activities. In the State Society, he was one of those who helped merge the Medical Association and the State Medical Society. Later, he was instrumental in molding the form of our State Society, helping to create the policy of financial conservatism and supervision by a Board of Trustees. Under his leadership, the scientific sessions of the Society developed into well organized scientific sections. He was an advocate of, and finally helped formulate the present Medical Practice Law which established the Grievance Com-

mittee. He saw the establishment of our House of Delegates into a smooth functioning organization with standing committees who carry on, during the recesses of the annual meetings.

Actively as he was engaged in these quasi-public services, he nevertheless continued working in his chosen medical field. He was an otologist. As such he directed one of the Ear Departments of the Manhattan Eye, Ear and Throat Hospital, and taught as Professor of Otology in the New York Post-Graduate Medical School and Hospital. He was the author of many articles dealing with the technical side of otology, and of a text book on Ear, Nose and Throat Diseases. He held positions of distinction in the scientific world, having been Chairman of the Section of Otology of the New York Academy of Medicine and President of the American Rhinological, Laryngological and Otological Society.

His interest and sympathy with the deaf-mute, led to the formation of the American League of the Hard of Hearing whose President he became, and until his death, this activity largely engaged his attention.

All these activities, were well thought out, and constructive improvements. The medical world in which he worked, is better because he lived and labored.

He was a simple man, of kindly temperament, serene judgment and high executive talent. He was an attractive clinical teacher in Otology, a delightful companion, and a desirable team-mate on a committee.

Every position he held meant to him "a job" to whose accomplishment he bent every endeavor until the project was well under way when he would entrust it to others, while he turned to organize and establish new propositions. No one outside the circles of organized medicine realizes the amount of unremunerated toil, and energy expended in the broader sense, for the public welfare, and in the narrower, for the improvement of the profession.

He died at the age of 77 years. Mentally alert to the end, age seemed not to dim his vigor. His life-work is an ever living example to those of us who were privileged to work with him, of unselfish devotion to duties voluntarily assumed.

### A Call for "Intestinal Stamina"

The members of the next Congress have been elected. They are turning their thoughts to the measures expected to come up for their decision in the coming session. One bill reported to be now in the making, or perhaps already written, will attempt to fasten socialized medicine upon the country. An effort will be made by its backers to rush it through the Congress and have it signed by the President before the doctors opposing it can muster their forces effectively. Who can doubt that the vigorous and richly subsidized supporters of state medicine are already at work on the Congressmen, preparing their minds to give quick assent to the legislation as soon as it is presented?

Who will be the natural, logical men to be appointed to the key posts in the new state medical administration, when and if it is set up? Who but the ones who are now so actively, by word and pen, trying to saddle this incubus upon the medical profession? Can we suppose, then, that they are now sitting idly by, letting the Congressmen make up their own minds without assistance? Hardly.

If they succeed, it will be because the doctors make no effort, on their part, to put their case before the members of Congress. A barrage of earnest letters from the physicians, not only of this State but of all the States, to the Congressmen of their districts, starting now, will do a thousand times more good than letters written some months hence, when the measure is actually before Congress and the Congressman, his mind distracted by scores of measures, is receiving bushels of letters on other topics in every mail.

The bane of the campaign against state medicine, so far, has been inaction. Some fine morning the physician may wake up to find state medicine a fact, and he can then take his choice between enrolling in the scheme and spending his days in a medical tread mill, sent hither and yon by political martinets, at less pay than the mechanic gets for doctoring sick motors, or he can stay outside and starve to death. He will have perfect freedom of choice to take either course he wishes.

Right now, however, he has a third choice. He can stand on his rights as a citizen and tell the man who is elected to represent him what he thinks. And this is the time to do it. A semi-medical term in current use is "intestinal stamina," which avoids the name of the portion of the cat that is supposedly used in tennis rackets. If we have that grand old quality that has won so many fights when all seemed lost, why not bring it forward now?

Nor should the profession relax its efforts because of the President's address on November 14th when he spoke of health insurance as something that may come "soon or later on." This phrase was grasped by some Washington correspondents as putting health insurance rather on the shelf for the present. The entire passage in his speech on this topic is worth keeping in mind. He said:

"There is also the problem of economic loss due to sickness—a very serious matter for many families with and without incomes, and therefore an unfair burden upon the medical profession.

"Whether we come to this form of insurance soon or later on, I am confident that we can devise a system which will enhance and not hinder the remarkable progress which has been made and is being made in the practice of the professions of medicine and surgery in the United States."

Immediately, of course, the correspondents hurried to Miss Frances Perkins, Secretary of Labor, and one of the chief backers of health insurance, to ask if the Administration was back-pedaling on this matter. To them Miss Perkins "said that there were, of course, many difficulties in the way of health insurance, including the attitude of much of the medical profession." That is a cheering report, at least, in showing that medical opposition is having its effect. Miss Perkins added that a report from a committee of physicians studying the problem is expected soon, which may report only "progress," but she thought that at least a "start" would be made this winter.

When the enemy shows signs of wavering or indecision, then the wise strategist looses his strongest attack. The wavering

in Washington is a sign that now is the critical moment to charge the enemy lines with horse, foot and dragoons. Determined action in the coming weeks may win the battle.

### Medical Practice Changes—Ethics, Never

Right and wrong have a way of remaining ever the same through the whirling centuries of change. Like the rules of health, if you violate them, you will suffer for it. Build your structure, if you like, in defiance of the plumb-line, but it will fall. Build your medical practice, if you will, in disregard of medical ethics, and you will see it end in failure and disgrace.

That, in a nutshell, is the basic thought of the three amendments to the Principles of Medical Ethics adopted by the A. M. A. at the Cleveland session to meet the new methods of practice that are springing up in various parts of the land. We have contract practice of several sorts, hospital practice, university practice, and the employment of physicians by lay corporations, perhaps to benefit the public, perhaps to thimble-ig doctors and public alike in a dollar-chasing racket.

No wonder the physician is a bit bewildered. He hears contract practice denounced by his brethren in the profession, yet he knows that all business is based on contracts and he can see nothing essentially wrong in them. Neither can the Judicial Council, which framed the new amendments. "Contract practice *per se* is not unethical," says the first amendment. It becomes unethical only when it violates well-established principles familiar to every doctor. Certain features or conditions, if present, make a contract unethical, says the amendment, as, for example:

"1. When there is solicitation of patients, directly or indirectly. 2. When there is underbidding to secure the contract. 3. When the compensation is inadequate to assure good medical service. 4. When there is interference with reasonable competition in a community. 5. When free choice of a physician is prevented. 6. When the conditions of employment make it impossible to render adequate service to the

patients. 7. When the contract because of any of its provisions or practical results is contrary to sound public policy."

It is often hard to judge, perhaps, if a certain contract falls within or without these rules, and the amendment wisely concludes that in case of doubt, "the decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole." Certainly nothing could be fairer than that.

Next we come to the association of a number of physicians in group practice, which has stirred up ill-feeling in many places. What is it that has caused the acrimony and criticism? In nine cases out of ten it is the group's resort to advertising methods and high-pressure salesmanship that not one doctor in the group would ever use in his own individual practice. They forget the simple truth that "the ethical principles actuating or governing a group or clinic are exactly the same as those applicable to the individual," and their union in an organization "does not relieve them either individually or as a group from the obligation they assume when entering the profession." In these clear words the second amendment brushes aside the clouds of doubt, and illuminates the situation with the white light of reason. Anyone who misunderstands matters after this will have some difficult explaining to do.

Worst of all, of course, are the lay organizations of high-power promoters who hire their doctors like factory hands and work them and the dear public for all there is in it. Doctors suffering from the depression are sometimes tempted beyond resistance by the pay-envelopes held out by these concerns. The amendment dealing with this type of practice is outspoken. It reads: "It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair com-

petition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy."

The lure of the unethical is no lure at all, of course, to the doctor who looks three, five, ten years into the future. Any medical organization of lay money grabbers is as certain to get into bad odor with the public as an infected pool in a swamp, and the doctor who is identified with it will never live it down in his lifetime. The new amendments are not preachy, they are merely codified common sense.

### Whispers, Whispers, Whispers

"Shall I come home for examination?" telegraphed a young man on vacation in Canada to his father, a well-known New York physician. The boy had heard the rumor that lepers had been discovered working in the plant manufacturing a widely advertised product he had been using. The father, fortunately, had a strong vein of common sense, and wired back: "In my opinion the rumor is a bunch of bunk!" The son continued his vacation.

But how many others were worried into nervous and perhaps physical ills, and how many thousand dollars were lost by the manufacturer whose product was falsely maligned by this whispering campaign? How many other products, too, have been damaged by rumor-mongers who start malicious reports as despicable as a stab in the back?

These questions are provoked by the discovery of a firm in New York City who advertise themselves as "trained propagandists," and contract to "give out information by word of mouth" in "subway, elevated, and railroad trains, street cars, steamboats, office or department-store building elevators," and also at "theaters, concerts, picnics, fairs, baseball and football games, and other events, and places of public assemblage." When questioned by reporters, the firm protested that it circulated no hostile rumors against any product, but only promoted benign propaganda campaigns to benefit the business of its clients.

So we have the business of buying and selling whispers, and, like many other lines

of endeavor, it is up against the rivalry of free competition. No town is too small to have its whisperers, who charge nothing for their work, but who can do more damage than a plague of locusts. Fortunately no village is too tiny, either, to have its spreaders of good reports, its carriers of kindly and helpful propaganda, and it is hardly too much to say that every doctor's success is founded on this basis. It rests on kind words. It is built on whispers—of the right sort.

Here, then, is a subject of vital concern to the physician. If his edifice can be made or unmade by whispers, should he not lay out his campaign accordingly? Why not do a little veiled advertising to help the kind words along, and why not administer a few sharp raps to Dr. X., who is capturing a lot of the local practice? Well, entirely aside from what the Medical Society and its rules may have to say about it (and they will say plenty), our complex human nature is built in such a strange way that efforts to move it this way and that often have results exactly opposite to those intended. Abuse your opponent in a political campaign, and you will elect him. Blow your own horn in a shrill and strident solo, and you only raise a laugh. So the doctor whose name suddenly pops up here, there, and everywhere is apt to arouse a curiosity that is not admiration, and the doctor who raps his brother practitioner will gain nothing by it. The medical rules of ethics are not mere paper regulations, concocted by self-appointed censors of conduct. They are founded deep in the nature of man, and cannot be flouted with impunity.

So even whispers have their place in our scheme of things, to rule our destinies for good or evil, and he who makes his plans without regard for them does so at his peril.

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*Nurse* (in insane asylum): "There's a man outside who wants to know if we have lost any male inmates."

*Doctor*: "Why?"

*Nurse*: "He says some one has run off with his wife."

ANNAPOLIS LOG.

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We read of a Seattle physician who testified in a suit for a fee for an appendectomy, the patient dying three weeks later, that damage to a doctor's reputation when a patient dies should entitle him to a large fee!

# News

*of Interest to the Profession*

## EXECUTIVE COMMITTEE

### FEE SCHEDULES AND THE STATE SOCIETY

Because there appears to exist some misunderstanding in some quarters, the Executive Committee issues the following official announcement:

The Executive Committee of the Medical Society of the State of New York calls the attention of the entire membership to the fact that the Society has never in its history adopted, endorsed, or set up any schedule for professional fees for medical service by its members in any field of medical activity. The Society has always taken the stand that arrangements for fees should be considered as personal and private arrangements between individual physician and patients.

#### AN INVITATION TO BE DECLINED

Recently a letter was received by the President of the Society and referred by him to

the Executive Committee. The letter was from the "Aetna Company" of 1123 Broadway, New York City. It contained an invitation for listing at an annual cost of \$25 "in a physician's addition to the forthcoming issue of our Insurance Directory" which "in its present form contains the names of attorneys in the United States and Canada familiar with insurance procedure."

The Executive Committee disapproves the inclusion of names of members in such a list. The Committee desires to call attention to the apparent similarity in names of the Aetna Company and the Aetna Life Insurance Company, our group insurance carrier. That there be no misunderstanding it is announced that investigation shows that there is no connection between the two companies.

*D. S. Dougherty, Secretary*

## PRIZE ESSAYS

Of the Medical Society of the State of  
New York

The Merrit H. Cash Prize and the Lucien Howe Prize will be open for competition at the next Annual Meeting of the Medical Society of the State of New York, May 13, 1935.

The Lucien Howe Prize, of one hundred dollars, will be presented for the best original contribution on some branch of Surgery, preferably Ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The Merrit H. Cash Prize, of one hundred dollars, will be given to the author of the best original essay on one of the following subjects designated by the Committee:

1. Traumatic Surgery of the Hand and Wrist including fractures not, however, of radius and ulna; infections; tendon suture, etc.
2. The relation of Thyroid Surgery to Cardiac Disease.
3. Surgery of the Blood Vessels.

Competition is limited to the members of the Medical Society of the State of New York, who at the time of the competition are residents of New York State.

The following conditions must be observed:

Essays shall be typewritten or printed and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the Committee considers that no essay or contribution is worthy of the prize, it will not be awarded.

All essays must be presented not later than April 15, 1935 and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 2 East 103rd Street, New York City.

*Eugene H. Pool, M.D., Chairman,  
Committee on Prize Essays.*

## ANNUAL MEETING OF THE SECOND DISTRICT BRANCH

The Second District Branch held its Annual Meeting on November 15, 1934 at the Garden City Hotel with attendance upwards of 200. At the scientific session in the afternoon twenty speakers presented various aspects in five-minute talks on medicine and therapy in infancy and childhood as follows:

- The Importance of Pre-Natal Care . . . . .  
Walter F. Watton, Brooklyn
- Examination of the Infant Immediately After Birth . . . . .  
Luvia M. Willard, Jamaica
- Fever in the Infant . . . . .  
Harold A. Butman, Manhasset
- Diet in Infancy and Early Childhood . . . . .  
Kenneth G. Jennings, Brooklyn
- Endocrine Conditions in Children . . . . .  
Murray B. Gordon, Brooklyn
- Oral Hygiene in the Child . . . . .  
Oscar Rodin, Brooklyn
- Prophylactic Immunization for the Child . . . . .  
Charles W. Martin, Far Rockaway
- Mental Hygiene . . . . .  
Sam Parker, Brooklyn
- The Care of the Eyes . . . . .  
A Milton Goldman, Rockville Center
- Nose and Throat Care . . . . .  
Samuel Zverling, Brooklyn
- Allergy . . . . .  
Henry Straus, Brooklyn
- Examination of the Pre-School Child . . . . .  
Abram S. Tepper, Far Rockaway
- Examination of Children at School . . . . .  
Joseph F. Paulonis, Brooklyn
- Infectious Diseases of Childhood . . . . .  
Walter C. A. Steffen, Flushing
- Surgical Problems in Childhood . . . . .  
John E. Jennings, Brooklyn
- Syphilis in the Child . . . . .  
Thurman B. Given, Brooklyn
- Deficiency Diseases of Infancy and Childhood . . . . .  
Sydney Nussbaum, Brooklyn
- Orthopedic Care . . . . .  
Kenneth T. Young, Rockville Center
- Tuberculosis in the Child . . . . .  
Henry A. Reisman, Jamaica
- The Nutrition of the Child in the Depression Era . . . . .  
Benjamin R. Allison, Hewlett

The election of officers resulted as follows:  
*President*, Carl Boettiger, M.D. of Flushing.  
*First Vice-President*, Irving Gray, M.D. of Brooklyn.

*Second Vice-President*, Albert E. Payne, M.D. of Riverhead.

*Secretary and Treasurer*, Alec N. Thomson, M.D. of Brooklyn.

The Annual Dinner was very well attended and three speakers addressed the gathering. Dr. Frederic E. Sondern, who had just returned from a trip to England, spoke as follows on National Health Insurance in England:

"In the London Times of the 27th of September last, I chanced to read that the Chief Medical Officer of the Ministry of

Health in his recent annual report quoted a very disturbing set of figures relating to time lost to industry through sickness. Among the insured population only, and excluding also loss due to sickness for which benefit is not payable, there was lost in 1933 a total of 29 million weeks work, or an equivalent of 12 months work for 558,000 persons. These figures, states the article quoted, cannot be regarded with complacency. You know the conservative attitude of the London Times. You will also note that there are conditions under which the insured persons do not benefit from such insurance.

"Taking for the moment the relative population of England and the United States, and assuming that the proportion of the members of a possible compulsory health insurance system to the total population would be the same in both countries, what would our figures be? The estimate works out as follows: A loss of 75½ million weeks work through sickness or an equivalent of 12 months work for 1,506,000 persons. While there are no existing figures in this country to verify this or any that would serve for a comparison, it would seem obvious that compulsory health insurance has not aided in the lessening of sickness in industry in England at any rate.

"Interest aroused by these figures induced me to turn to the 15th Annual Report of the British Ministry of Health for 1933-1934. This is a book of some 400 pages. The subject of National Health Insurance forms but a minor part of the report and even so it quotes many conditions and figures of interest to us, particularly in view of the present day agitation for this type of medical care, the more so as they are at considerable variance with those often quoted by the advocates of compulsory health insurance in this country.

"For example, there are 15,150,000 persons at present insured under the system and there are 15,500 physicians who do this type of practice. Thus if each physician has an equal number of patients on his panel, this number would be 970, and with a remuneration of 9 shillings per patient per year the income would be £437 or 2185 present day dollars, but as this amount is now subject to a 10% emergency deduction, it is reduced to \$1,967. Even this amount is not net as it is subject to additional details to be mentioned later to say nothing of income and other taxes. It must not be forgotten that all panel doctors do not have the same number of patients by any means, thus the majority have an income of less than \$1,967 and the minority receive larger sums. This is scarcely compatible with the quoted average of £500 to £600 or \$2,500 to \$3,000 so often mentioned in pro health



insurance talks here. Let us assume that 20% of the doctors do have an income of £600 or \$3,000. What would be left for the remaining 80%—just exactly an average of \$1,700.

"Let me analyze if you allow, some more of the figures quoted in the report, which are instructive to us.

"The Cost of Medical Care is detailed as follows: The total medical benefit cost was £8,420,000 or \$42,100,000. Of this sum the insurance doctors received £6,077,000 or \$30,385,000 divided as I have stated. The remaining £2,343,000 or \$11,715,000 were allowed as follows: £1,863,080 or \$9,315,400 to the insurance chemists for drugs and appliances, an average of 62 cents per patient per year. The maximum allowable under the rules is 69 cents per patient per year. Even at that, there is a strong paragraph on the investigations of excessive prescribing, and while the accusations were numerous the convictions were few, but amounts as high as \$100 were deducted from several doctors incomes.

"£196,000 or \$980,000 were allowed for medicines supplied by doctors personally and £203,000 or \$1,015,000 were paid doctors on account of mileage to outlying districts—together about \$127 per panel doctor.

#### RECEIPTS FOR 1933

Contributions (sources not detailed) .....	£22,020,000	\$110,100,000
Interest and other receipts .....	4,870,000	24,350,000
Parliamentary votes, grants .....	5,056,000	25,280,000
Total .....	£31,946,000	\$159,730,000

#### EXPENSES

Medical services (Prev. detailed) .....	£8,633,000	\$43,165,000
Sickness Benefit .....	9,562,000	47,810,000
Disablement Benefit .....	5,095,000	25,475,000
Maternity Benefit .....	1,296,000	6,480,000
Other Benefits incl. Sanatoria .....	2,204,000	11,020,000
Total .....	£26,790,000	\$133,950,000

#### COST OF ADMINISTRATION

Approved Societies and Ins.			
Coms. ....	£3,923,000	\$19,615,000	
Central Departments .....	841,000	4,205,000	
		4,764,000	23,820,000
		£31,554,000	\$157,770,000

"£63,900 were paid on account of insured persons exercising their option to claim treatment through approved institutions, and £7,250 on account of insured persons who were required or allowed to make their own arrangements for medical care. In other words a total of \$355,750 were allowed for the purposes stated. It is not reasonable to suppose that the panel doctor received remuneration for such cases and the deduction of this amount from his income would further reduce it accordingly.

"Finally £9,000 or \$45,000 were set aside for post-graduate study courses. Of this amount only £2,830 or \$14,150 were used in 1933 for this purpose in grants to 102 doctors. This equals \$139 each. Can you visualize what sort of post-graduate course can be had with board and lodging for this sum. Let us assume for the sake of argument that the whole amount of £9,000 or \$45,000 had been used. This would mean a bit over \$29 per year per panel doctor, and each one could thus be entitled to the larger sum of \$145 if he would seek instruction once in 5 years. These figures speak for themselves and I quote them on account of the rosy description of this feature by the proponents of compulsory health insurance in this country.

"It seemed but logical and I hoped that the figures quoted would be followed by equally simple and illuminating ones concerning administrative costs as well as the cost to the employe, the employer and the Exchequer if any, but such is not the case. In fact the quotations in this regard are so involved and include so many other "benefits" that it is quite impossible to figure by itself the net costs of compulsory health insurance which seems unfortunate. You may however be interested in some of these inclusive figures nevertheless.

"I must repeat that it seems strange that the relative cost of administration is not detailed and thus no opinion is justified concerning a total administrative cost of £4,764,000 or \$23,820,000, a goodly sum however even for the inclusive administration of benefits for 15,500,000. This equals £1-6-0 or \$6.50 per head per year.

"Further comment on these figures serves no purpose but visualize for a moment if you will the figures that would be produced by such systems in our country, and the oppor-

tunities offered thereby to lay administrators.

"After all the matter that concerns us most is the quality of the medical services rendered under such auspices. Much has been said and written in this regard, and I can but add that in my experience in England, the insured patient has no regard for his panel doctor and in the event of a serious condition, in his words he secures a "real doctor" if it takes the last shilling he has."

The President of the Medical Society of the State of New York, Dr. Arthur J. Bedell, then delivered an address with the title of **IS THE PHYSICIAN PREPARED?** The full address will be found elsewhere in this issue.

Following this address Mr. Mathew Woll, third Vice-President of the American Federation of Labor, spoke at some length on the subject of **LABOR LOOKS AT MEDICINE.**

Mr. Woll drew both parallels and contrasts between medicine and labor. Both are deeply interested in health. To the laboring man

health is capital because sickness spells loss of power to earn his wage. Both seek to retain the personal relationship between patient and physician.

On the problem of how to secure adequate care and how to compensate the physician labor and medicine are not at present of the same mind. Labor would prefer wages sufficient for each member to compensate the doctor privately. But since industry does not grant this wage, labor must turn to compulsory health insurance, which is not accepted by organized medicine.

In the field of workmen's compensation labor stands for administration by exclusive State Funds rather than through the intervention of insurance companies that must show profit on their operations.

The speaker believed that the closeness of interests of medicine and Labor indicates the necessity for friendly discussion of the question how best to provide adequate medical care to labor and adequate reward to medicine.

## DIPHTHERIA CAMPAIGN IN NEW YORK STATE

The *Weekly Bulletin* of the Municipal Department of Health of Albany in its November 8, 1934, issue contributes a most inspiring call to arms that has appeared since the start, last Spring, of the present antidiphtheria campaign. It is here reprinted:

### RETROSPECT

*Nineteen Hundred, A.D.:*

Where are the elves who danced in play  
With us, bright-eyed, the other day?  
Playmates' quest in sorrow ends—  
Where, then, are our little friends?

(Sinister card on the home bereft)  
Where were you when the big box left?  
Came in the night—took them away:  
Thus went the chums of yesterday.

Whisper the word and pass the gate  
Stealthily, children—perils 'wait;  
Two from this house, one from there.  
Lord, not OUR baby—this one spare!

*Nineteen-Thirty-Four—Thirty-Five:*

Thanks to the toil of folks in white,  
Little ones safely sleep tonight.  
Mothers need fear no strangling cry;  
No more from THAT must baby die.

Arms are ready to kill the foe  
But we cannot fight it unless we know.  
Have them protected—it is their due,  
Fathers and Mothers, it's up to you!

MARY A. O'LEARY.

The *Bulletin* comments on this poem by saying that "The thought expressed will recall to the minds of the older physicians who practiced before 1900 and in the early days of the present century some of the tragic incidents in the experience of the family physician—tragic because there was nothing he could do about it.

The younger generation will never know the trials and hardships which were borne by their predecessors in fighting diphtheria, which were intensified by the frantic fear and uncertainty on the part of the heads of the families. The poem expresses the idea of the scourge from the family standpoint, although it voices thanks of a later generation to those who discovered and made use of the curative and preventive agents which have drawn the sting from the old foe. However, we must never forget those old rugged heroes who bore the brunt of the battle until the weapons were forged with which we are able to accomplish the task. For without the help of antitoxin, toxin-antitoxin, or toxoid they usually fought a losing battle, unless an early intubation was performed.

"We should give thanks that an almost 100 per cent sure way has been found and that is prevention of the malady."

## MEDICAL PRACTICE ACT, 1926-1934

HAROLD RYPINS, M.D.

*Secretary, Board of Medical Examiners, Executive Secretary, Medical Grievance Committee*

Since the investigation and prosecution of illegal practitioners, as well as the work of the Grievance Committee in the discipline of licensed physicians, is largely made possible by the two dollar annual registration fee paid by all physicians to the State Department of Education in accordance with the statute, the following brief summary of the results of these activities should be of interest to all practicing physicians in New York State.

The immense amount of work which has been accomplished in the elimination of illegal medical practice is shown in the following summary of the 3,395 complaints of illegal practice investigated by the Education Department from 1926, when the Medical Practice Act went into effect, until July, 1934.

1934 (to July 1)		1926-1934	
149		1,345	
104		1,488	
91		562	
75	Acquittals . . . . .	473	
4	Withdrawn . . . . .	36	
0	Pending trial . . . . .	41	
12	Cases incomplete . . . . .	12	
58			
402		3,395	

In the left-hand column the classification of cases investigated is for the current year; in the right-hand column the total cases investigated for the entire period, 1926-1934. The investigation of 1,345 complaints or approximately one-third of those received, failed to show that there was any violation of the law; in 1,488 cases, where a violation was found, such violations were stopped without the necessity of court procedure. These violations were largely of a minor or technical nature.

This leaves 562 cases in which the evidence obtained was sufficient to require legal prosecution. Of these 562 prosecutions, 473, or 84 per cent, resulted in convictions. Only 36 cases, or 6 per cent resulted in acquittals. Forty-one cases were withdrawn and 12 are still pending trial. This represents an extraordinarily high percentage of prosecutions in any type of criminal procedures.

During the period September 1928 to July 1934 the Medical Grievance Committee has considered 397 complaints against licensed physicians, classified as follows:

Improper advertising	73
Attempted abortion	47
Aiding illegal practitioners	50
Ambulance chasing	16
Fraud and deceit	40
Malpractice	61
Unethical practice	76
Narcotic violation	2
Insanity	1
Arbitration	3
Miscellaneous	26

Of these 397 complaints, 355 were disposed of by the Grievance Committee (206 by the Secretary, 139 after informal hearing, and 10 after formal hearing). In addition, 26 cases were referred to the Board of Regents after formal hearing by the Grievance Committee. Of these the Board of Regents revoked 11 licenses, suspended the licenses of 6 physicians from six months to two years; ordered formal censure and reprimanded by the Grievance Committee in 8 cases; and dismissed 1 case. There are 16 cases pending.

The work of the Grievance Committee has been of great benefit to the public and the profession. It has protected a large number of physicians from unfounded and unwarranted claims of incompetence, malpractice, and negligence and saved them from unnecessary civil court procedures without any expense or publicity. On the other hand, it has afforded a means whereby the medical profession's high standing is maintained.

Neither the Secretary of the State Board of Medical Examiners, who acts as Executive Secretary of the Grievance Committee, nor any members of the Grievance Committee receive any remuneration for these services.

In general, the amount of money received from physicians' fees, plus fines, approximates the amount of money spent annually for the enforcement of the Medical Practice Act, a small balance being returned to the State treasury at the end of each fiscal year as required by the law.

## AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

## Prize Essays

This Association again offers its Van Meter Prize Essay Award of \$300, and two honorable mentions, for the best essays on the sub-

ject of goiter that may meet the standards of its award committee. Essays must be based on original research work on the sub-

ject of goiter, preferably on its basic causes. While competition is widely open in world-wide fashion, all members of the Medical Society of the State of New York are eligible as competitors.

In 1934 the first prize of \$300 was awarded to M. A. B. Brazier, Ph.D., B.Sc., London, England, for her essay "The Impedance Angle Test for Thyrotoxicosis." First mention went to Professor Ugo Cerletti, Genoa, Italy, for his essay "Three Years of Experimental Research in the Etiology of Endemic Goiter." Second mention was given to

D. Ray McCullagh, M.D., Cleveland Clinic, Cleveland, Ohio, for his essay "Studies in Blood Iodine using a New Chemical Method."

Competing manuscripts should be in the hands of the Corresponding Secretary, W. Blair Mosser, M.D., Kane, Pa., not later than April 1, 1935. The first prize essay, or its abridgement, is to be presented at the next annual meeting of the Association to be held in Salt Lake City, Utah, in June, 1935, either by the author or a substitute. Publication is left to the author.

### A.M.A. SCIENTIFIC EXHIBITS

Application blanks are now available for space in the Scientific Exhibit at the Atlantic City Session of the American Medical Association, June 10-14, 1935. The Committee on Scientific Exhibits requires that all applicants fill out the regular application form and re-

quests that this be done as early as convenient. Applications close February 25, 1935.

Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Ill.

### FIRST INTERNATIONAL CONGRESS OF GASTRO-ENTEROLOGY

From August 8 to 10, 1935, there will be held at Brussels, Belgium, for the first time a Congress on Gastro-enterology of international scope. The President of the Congress is to be Dr. J. Schoemaker of the Hague, Holland, the Secretary-General, Dr. George Broh  , Rue de la Concorde 64, Brussels, Belgium. The Congress will assemble under the patronage of Their Majesties the King and Queen of Belgium.

Dr. Max Einhorn of New York City has been asked to form and act as chairman of the North American Committee, and Dr. De-Witt Stetten of New York City has been designated as Secretary of this Committee. A tentative list of members of the North American Committee has been drawn up as follows:

Alvarez, Dr. Walter C., Mayo Clinic, Rochester, Minn.

Andresen, Dr. Albert Frederick Ruger, 88 Sixth Ave., Brooklyn, N. Y.

Balfour, Dr. Donald C., Mayo Clinic, Rochester, Minn.

Bassler, Dr. Anthony, 784 Park Ave., N. Y. C.

Bettman, Dr. Henry Wald, 19 Garfield Place, Cincinnati, Ohio.

Bishop, Dr. Louis Faugeres, Sr., 121 East 60th St., N. Y. C.

Bishop, Dr. Louis Faugeres, Jr., 121 East 60th St., N. Y. C.

Boles, Dr. Russell S., Rittenhouse-Plaza, Philadelphia, Pa.

Brooks, Dr. Harlow, 47 West 9th St., N. Y. C.

Cheney, Dr. William Fitch, Shreve Building, San Francisco, Cal.

Cole, Dr. Lewis Gregory, 36 East 61st St., N. Y. C.

Coleman, Dr. Warren, 875 Park Ave., N. Y. C.

Crohn, Dr. Burrill B., 1075 Park Ave., N. Y. C.

Dube, Dr. Joseph E., 454 Sherbrooke East, Montreal, Canada.

Einhorn, Dr. Max (Chairman), 20 East 63rd St., N. Y. C.

Finkelstein, Dr. Reuben, 576 Eastern Parkway, Brooklyn, N. Y.

Garbat, Dr. Abraham Leon, 113 East 81st St., N. Y. C.

Goldstein, Dr. Hyman I., 1425 Broadway, Camden, N. J.

Graham, Dr. Evarts A., Washington University, School of Medicine, Dept. of Surgery, Barnew Hospital, 600 South Kings highway, St. Louis, Mo.

Hayes, Dr. William Van Valzah, 115 East 61st St., N. Y. C.

Heyd, Dr. Charles Gordon, 116 East 53rd St., N. Y. C.

Horsley, Dr. J. Shelton, St. Elizabeth's Hospital, 617 West Grace St., Richmond, Va.

Jacobsen, Dr. William C., 40 West 69th St., N. Y. C.

Jones, Dr. Allen A., 333 Linwood Ave., Buffalo, N. Y.

Kaufman, Dr. Jacob, 52 East 58th St., N. Y. C.

Kellogg, Dr. Edward L., 43 West 54th St., N. Y. C.

Kelly, Dr. William D., 220 Lowry, Medical Arts Bldg., St. Paul, Minn.

Lahey, Dr Frank H, Lahey Clinic, 605 Commonwealth Ave, Boston, Mass  
Lynch, Dr Jerome Morley, 205 East 61st St N Y C  
Lyon Dr B B Vincent, 2031 Locust St, Philadelphia Pa  
Manning Dr G Randolph 510 Madison Ave, N Y C  
Morgan, Dr William Gerry, Georgetown University, School of Medicine Washington, D C  
Nichols Dr Bernard H, Cleveland Clinic Euclid Ave at 93rd St, Cleveland, Ohio  
Rafsky, Dr Henry A, 77 East 79th St. N Y C  
Sheehan Dr J Eastman 833 Fifth Ave N Y C

Simon Dr Sidney K, 1520 Aline St, New Orleans La  
Smithies, Dr Frank, 920 North Michigan Ave Chicago Ill  
Soper, Dr Horace W Soper Mills Clinic 3701 Westminster Place St Louis, Mo  
Stetten Dr DeWitt (Secretary) 850 Park Ave, N Y C  
Stewart Dr William H Lenox Hill Hospital, 107 East 76th St N Y C  
Sullivan Dr Albert J, 330 Cedar St, New Haven Conn  
Weiss Dr Samuel 146 Central Park West, N Y C  
Whitler, Dr Homer H Hume-Mansur Bldg, Indianapolis Ind

## Medicolegal

LORENZ J BROSNAN, Esq  
Counsel, Medical Society of the State of New York

### Responsibility of Physician for Negligence of Dentist

In one of the Mid-Western states, in a recently decided malpractice case\* the Court was called upon to decide the extent to which one physician might be held legally responsible for the negligence of another. The fact situation involved is an interesting one, and must be referred to in some detail.

The plaintiff a certain Miss N had been for some time under the care and treatment of a Dr W for pains in her neck, face, shoulder and arm. In the course of the doctor's treatment he had certain x-ray pictures taken which revealed that the patient was suffering from an impacted and impacted wisdom tooth. He determined that it was at least a partial cause of her complaints and told her it should be extracted. A conversation was had between Dr W and Miss N as to what dentist should be employed to make the extraction. One dentist was discussed and his name discarded when Dr W told the patient that that dentist would probably put her to the expense of additional x-rays. The doctor then suggested that Dr S, a dentist, would accept his x-ray and recommended that the patient arrange to have Dr S take out the tooth. Thereupon the latter dentist was consulted and after examining Dr W's x-ray plate, he also advised

the extraction. It was determined that an ether anesthesia should be administered and arrangements were made so that Dr W acted as anesthetist in connection with the operation. According to the story told by the patient and her mother, Dr W was also to "look out for her interests" at the operation.

The anesthetic was administered at about nine o'clock in the morning, and the patient was under its influence for about three hours, and was unable to sit up until several hours later. The dentist upon undertaking the extraction first extracted an adjoining tooth which he claimed it was necessary to remove. Upon attempting the removal of the impacted wisdom tooth, in some manner the patient's lower jawbone was fractured. Upon the discovery of the fracture, Dr S, the dentist, cleansed the wound, and then Dr W stepped in and put the bones in the best alignment possible and held them in that position while the dentist applied a bandage. The same evening the physician applied a leather strap to hold the jaw in place. The physician then took over the care of the case and saw her daily. He changed the dressings, and gave antiseptics to check infection regularly. A week after the operation Dr W took an additional x-ray, and a day later he removed the chin strap, re set the jaw and

\* Nelson v Sandoli 209 N W 440

at that time the dentist under his direction wired the upper and lower teeth together. The week after the physician again manipulated the jaw after removing the wires, and again Dr. S replaced them under his direction. A few days later the patient dispensed with the services of Dr. W and went under the care of another physician.

The patient brought an action for malpractice against the dentist and the doctor as co-defendants, charging them jointly with negligence in: First, administering the anesthetic, second, extracting a tooth in addition to the impacted tooth, third, breaking the jawbone in extracting the impacted tooth, fourth, failing to properly set the fracture, and fifth, failing to properly take precautions against infection.

The case came on for trial, and the action was dismissed on a technicality as to the dentist Dr. S, leaving Dr. W in the position of being the sole defendant against whom a verdict might be rendered. Three expert witnesses, two of them physicians and one a dentist, took the stand on behalf of the plaintiff, and gave a great deal of testimony but the Trial Court ruled that they failed to give any proof to the effect that the defendant Dr. W was himself negligent, and directed a verdict in favor of the defendant, at the close of all the evidence, thereby also ruling that Dr. W was not responsible for the negligence of the dentist.

An appeal was taken on behalf of Miss N, and the important contentions made were first, that there was proof that Dr. W was negligent in administering the anesthetic and the aftercare, and second, that he was responsible for the negligence, apparently conceded, of Dr. S in permitting the jaw to break during the extraction.

The Appellate Court reviewed the testimony on the trial and found there was no evidence to warrant a finding that Dr. W, in administering the anesthesia or in caring for the plaintiff after the operation varied materially in his methods from methods approved and used by physicians and surgeons generally. Dr. W's liability, therefore, necessarily was dependent, if he was to be held liable in the case, upon the negligence of the dentist.

The Court in deciding that under the circumstances the physician was not responsible for the negligence charged against the dentist, said in part:

"We think this testimony has no tendency to show a joint employment of the

appellees to extract the tooth, or to establish any relation between them by virtue of which Dr. W would be liable for the alleged negligence of Dr. S. Dr. W did not undertake to extract appellant's tooth, or to have it extracted by Dr. S. There was no relation of partnership or agency between them. The most that the testimony tends to show is that Dr. W directed appellant to go to Dr. S for the purpose of having the tooth extracted, and that plaintiff employed Dr. S for that purpose and employed Dr. W to administer the anesthetic. Her statement that Dr. W consented to look after her interests in the operation is not susceptible of the construction that he thereby agreed to be responsible for Dr. S's negligence. At most he was to 'help' Dr. S.

"The mere recommendation by one doctor of another does not make the one liable for the malpractice of the other. This has been held to be true where one physician advises an operation, and, with the consent of the patient, arranges for it to be performed by another, a competent surgeon, whom he assists. And where the physician in charge of a patient calls a surgeon into the case to operate and assists in the operation by doing what he is directed by the surgeon to do, it has been held he is not liable for negligence in the operation, in the absence of negligence in recommending the surgeon, or on his own part in assisting him."

The Court further said:

"While the skill and knowledge required of a physician and of a dentist are the same in degree, they are obviously different in character. They must each possess and exercise the knowledge, skill and care ordinarily possessed and exercised by practitioners of their particular art in like localities, but the physician is not required to have or exercise the peculiar skill or knowledge required of the dentist, nor is the latter bound to possess the knowledge essential to the general practice of medicine or surgery.

"There is no testimony tending to show that Dr. W took any part in the actual extraction of appellant's teeth, except that he administered the anesthetic and assisted Dr. S by handing him instruments and disposing of blood cloths, by throwing them on the floor. There is testimony from one witness that at one time he suggested a change of forceps, but no showing that the suggestion was acted upon. \* \* \*

"It is well settled that, generally speaking, a physician who merely administers an anesthetic to a patient who is operated on by another is not liable for the negligence of the operating surgeon."

The Court, therefore, we feel, very properly affirmed the judgment of the lower Court, there being no competent proof of his personal negligence, and he not being justly responsible for the negligent acts of the dentist, if in fact they were negligent.

### Claimed Injury to Uvula

A child about four years of age was brought to the office of a doctor specializing in ear, nose and throat work for examination. The doctor found that the patient's tonsils and adenoids were enlarged and contained pus, and suggested their removal. The patient was, a few days later, brought into his office for operation, and he put the child under an ether anesthetic and performed an operation upon her for the removal of both her tonsils and adenoids. The operation was uneventful. The child was put to bed and about three hours later there was a slight oozing of blood from the child's nose. This was treated by dropping adrenalin into the nostrils and application of an iron sulphate solution. The hemorrhage stopped, and about six hours later the child was permitted to return to her home. The following day when the doctor attended her the patient was suffering from further bleeding and the doctor controlled the condition by injection. From that time the child's recovery was uneventful. The next the doctor heard of the case was when summons and complaint were served upon him commencing a malpractice action charging him with general negligence in the performance of the operation. It was ascertained that the claim which was being made on behalf of the child was that the doctor performing the operation had cut or amputated the uvula, as a result of which it was claimed the child had become anemic, unable to talk without stuttering and had suffered from hemorrhages. Physical examination was made of the child by a doctor on behalf of the defendant. The examination revealed that the child was in excellent health, having rosy cheeks and full red lips, with no indications of being anemic. Exam-

ination of the throat showed that the tonsils and adenoids had been removed with good results, that the child had only a rudimentary uvula, being no more than a curve in the soft palate, coming to a short point in the center of the soft palate. It was impossible for the doctor making the examination to find any indication that the uvula had been injured during the operation. The examining doctor also found that the child's voice was clear and distinct with no defects.

The case was apparently instituted in an attempt to obtain a settlement on a nuisance basis but of course no such settlement was made, and after the case had been pending for some time and no steps had been made by the plaintiff to bring it on for trial a motion to dismiss the case for lack of prosecution was made on behalf of the defendant doctor, which was granted, thereby finally disposing of the case.

### Amputation of Leg Subsequent to Herniotomy

A general surgeon was consulted by a patient about sixty years of age who complained that he was suffering from hernia and stated that he desired to have an operation performed.

The doctor examined him and found that he was suffering from a condition of double inguinal hernia. The doctor explained to the patient that he would not advise an operation by reason of the age of the patient if it was possible to hold the hernia in place by means of a truss. However, the patient, in view of the possibility of strangulation, insisted that an operation be performed.

Patient entered a hospital and under a general anesthesia the surgeon undertook to perform the operation. The right side was first operated upon, which was uneventfully completed. He then undertook the operation on the left side, and during the completion of the operation on the left side hemorrhage developed, due to the fact that a blood vessel was located in an abnormal position. The bleeding vessel was tied off and the hemorrhage stopped. The patient went from the operating room in normal condition.

About five or six days later the patient complained of a coldness in his left leg.

Upon examination the left foot appeared to be pale. After several days elapsed the foot became discolored and painful. The condition became worse and two weeks after the operation the surgeon found it necessary to amputate the left leg through the middle third in order to prevent the spreading of a gangrenous condition through the patient's circulatory system which would in his opinion have been fatal. Thereafter the patient's recovery was good, and he left the hospital with an excellent result from the herniotomy.

A malpractice action was instituted against the doctor charging him with having performed the operation without taking the necessary precautions before the operation and in using improper and unsafe instruments. The claim was made that due to the negligence of the defendant a condition was permitted to develop which necessitated the amputation of plaintiff's left leg. An action was brought in a county considerably distant from where the defendant practices his profession and where the operation had been performed and a change of venue was obtained changing the place of trial to the county where the doctor practiced. Thereafter the case remained practically dormant for several years, and at the end of that time a consent to discontinue the action was obtained from the plaintiff's attorney.

### Alleged Diathermy Burn

Plaintiff was employed as a night watchman. He claimed to have sustained a fall on some stairs about the premises where he worked, injuring his back. He reported the matter as a compensation case and was referred to a certain physician for treatment. The doctor called upon him at his home and found him in bed with a large mustard plaster on his back. The doctor removed the plaster and found that there was a burned condition of that portion of the back where the mustard plaster had been. He examined him and found certain minor abrasions which the patient claimed caused him a great deal of pain. The doctor prescribed sedatives for him. He saw him for a few days, at the end of which time he was able to return to work.

Shortly thereafter the doctor was again called to see the man and he was then complaining of a strained back. The doctor, upon examination, found a slight spasticity

of the muscles in the lumbar region. The doctor directed the application of hot packs and liniment rubs, and subsequently the patient came to the doctor's office for diathermy treatments which were administered at the suggestion of the Compensation Examiner. A number of mild diathermy treatments were administered from time to time, infra-red lamp treatments were also administered, as well as massage by means of an electric vibrator. Nothing out of the ordinary developed as a result of any of the treatments so long as he remained under the care of the doctor. The patient apparently was a malingerer attempting to magnify his complaints of pain in order to enlarge upon his claim for compensation.

Some time later patient started an action against the doctor which charged that the defendant had on one occasion applied a diathermy apparatus to him and had gone away to answer a call leaving the current turned on for a long time so as to severely burn him. Plaintiff claimed that as a result of the alleged burn he had five large permanent scars on his body. The doctor denied that any such burn ever developed or that he had ever left the plaintiff unattended during the administration of any treatment.

The case was brought on for trial before a court and jury and the issues of the case were submitted by the court to the jury, who rendered a verdict in favor of the defendant, thereby discrediting the story of the plaintiff and exonerating the defendant of all charges of malpractice.

### A GRACEFUL TRIBUTE

Dr. Morley B. Lewis closed his retiring presidential address to the Suffolk County Medical Society on October 25 with these graceful verses:

"In the hustle and bustle of business,  
With its slaving and saving and grind,  
We're too apt to credit successes  
To the works of our own hands and mind.

But I pause at this annual meeting  
To give credit where credit is due,  
To thankfully say that our progress results  
From the friendship of such doctors as you."

*Patient:* "I understand fish is good for the brain. Can you recommend anything special?"

*Doctor:* "Well, you might begin with a whale."

NEBRASKA STATE MEDICAL JOURNAL.



# Books

## BOOKS RECEIVED

**The Anemias.**—By Janet M. Vaughau Octavo of 248 pages, illustrated. New York and London, Oxford University Press, 1934. Cloth, 12/6

In this volume Janet Vaughan presents a timely exposition of the present knowledge concerning the subject. Based upon her own investigations and an intimate knowledge of the subject, she has successfully undertaken to simplify a state of confusion, almost chaos, existing in the literature.

Her classification is understandable, simple, and complete. She avoids as much as possible the use of new and doubtful terminology.

The various diseases (anaemias) are considered in a systematic and practical fashion—discussing synonyms, definition, geographical distribution, race, sex, age, hereditary factors, symptoms, pathology, etiology, differential diagnosis and treatment. An excellent bibliography is included. The book can be highly recommended to all who come in contact with the anemias, the practitioner as well as the expert hematologist.

MAX LEDERER

**The Chances of Morbid Inheritance.**—Edited by C. P. Blacker, M.D. Octavo of 449 pages. Baltimore, William Wood & Company, 1934. Cloth, \$3.00

An authoritative and fairly comprehensible work presented in a concise, and especially an opportune time.

Each theme is treated by a special writer, and it is difficult, in a work so constructed, to avoid slight repetitions.

Though a wide range of opinion exists as to many of the dogmas considered, the aim is to extract a fair average or estimate. For those who wish light on this subject this is an admirable work, perhaps easier for a mathematical than linguistic mind. It is a splendid effort to make useful knowledge available to physicians, even though many points are still hazy.

WILLIAM BROWNING

**The Medicolegal Necropsy.**—A Symposium held at the Twelfth Annual Convention of the American Society of Clinical Pathologists at Milwaukee, Wisconsin, June 9, 1933. Edited for the Society by Thomas B. Magath. Octavo of 167 pages, illustrated. Baltimore, Williams & Wilkins Company, 1934. Cloth, \$2.50

This volume presents material by outstanding leaders in medicolegal experience. It is thoroughly reliable. It discusses the value of the medical examiner in contrast to the coroner's system. Details pointing a way for the further improvements to be expected in crime detection, in general the laws governing organs at necropsy.

It presents by a most experienced authority a detailed procedure in medicolegal necropsy. We must, however, caution that this work alone does not replace larger books which are necessary. Those interested in this subject should be familiar with this publication.

M. E. MARTEN

**Mental Deficiency Nursing.**—By O. P. Napier. Pearn 16mo of 281 pages. Baltimore, William Wood & Company, 1934. Cloth, \$2.00

This is a unique compend written in an unusual style and stressing practical facts. The teaching and study methods are strikingly useful. It includes theoretic and practical branches of nursing study considerably beyond its specific scope. It is regrettable that the psychiatric group of disorders were not included, since much of the material is directly applicable to this field as well. The mental classifications, administrative features, and legal aspects are British. Instructors of student nurses in any subject should be given the opportunity of utilizing this small volume. The student nurse will certainly use it, and perhaps to the exclusion of larger texts.

IRVING M. DERBY

**A Textbook of Authors.** Edited Octavo Octavo University Press, The fourth true textbook presents its quality is appa of the infectious diseases are discussed by Lord Horder, who has been called "the first physician of England." The heart is covered by Price himself, the kidneys by

Langdon Brown and Geoffrey Evans, the digestive tract by Arthur I. Hurst, tropical diseases by Low and

is struck by the similarity can medicine. In spite students who have studied this as though the common races so rapidly diffuses new knowledge that they remain more in intellectual balance than do aliens. At all events this book treats of medicine, in concept and procedures, much as our authorities approach it. It is up to date, and it is extraordinarily complete.

TASAKI HOWARD

**The Chemistry of the Hormones.**—By Benjamin Harrow, Ph.D., and Carl P. Sherwin, M.D. Octavo of 227 pages. Baltimore, Williams & Wilkins Company, 1934. Cloth, \$2.50

This book is written for the use of the laboratory worker who wishes to prepare active hormone fractions, or to isolate a chemically pure hormone. It is also useful to the student who wants a concise account dealing with the chemical characteristics of the hormones.

The authors must be commended on the competent and lucid presentation of their subject. Their bibliography, without attempting to be complete, covers most of the important contributions. Hence the book serves the needs of the laboratory worker not only as a reliable laboratory manual, but also as a useful source of references.

M. A. GOLDSIEHER

**Parasitism and Disease.**—By Theobald Smith, Octavo of 196 pages. Princeton, N. J., Princeton University Press, 1934. Cloth, \$2.00

In this volume is found a comprehensive exposition of the groundwork and principles of the biological problem of parasitology in its broadest sense. Originally presented as the Vanuxem Lectures for lay students, the publication has been expanded to a text of instructive and highly interesting material, requiring more than superficial technical knowledge for proper comprehension. The major theme has been the historical development of understanding of the manifold subtleties existing in the balance between invasive diseases and their causative agents. This theme has been developed through phases of parasitic and cellular biology, immunology, epidemiology, and specific therapy. The mellow experience of the author is well reflected in his well rounded subject which will be stimulating for every reader.

IRVING M. DERBY

**The International Medical Annual.—Year Book of Treatment and Practitioners' Index.** 52nd Year, 1934. Edited by H. L. Lidy, M.D., and A. Rendle Short, M.D. Octavo of 579 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth \$6.00

While medical literature is replete with novel suggestions comparatively few seem worthy of outstanding merit. Most reports are merely repetitions and confirmations of accepted practices. For that reason, a skeptical comment by an editor, such as "copper is an unnecessary adjunct to iron therapy in the treatment of all forms of hypochromic anemia in human beings" may awaken those who fall into the rut of reaching out for everything that smacks of progress. There is some encouraging news regarding radiation for early cancer of the anus in preference to surgery. Also, there is a report on the successful removal of cataractous lenses with a fine electrocoagulating instrument known as an electrodiaphane. It is still new and therefore cannot be recommended for general use.

Whether we choose to agree or disagree with the many reports summarized in this annual, in either instance we should be satisfied. For when we agree, we are satisfied with existing knowledge, when we disagree, we find a stimulating basis to correct existing defects.

EMANUEL KRIMSKY

**Industrial Toxicology.**—By Alice Hamilton, M.D. 16mo of 352 pages. With subject index. New York, Harper & Brothers, 1934. Cloth, \$3.00

This volume is one of a series of Medical Monographs. Dr. Hamilton well says that this vast subject can only be sketched briefly in the space allotted, but by

this very reason it is a valuable book for quick reference. The subject matter is replete with indices, to a bibliography of 655 items placed at the end of the volume; this is of great value to one interested in industrial medicine. Up-to-date information on recent studies in this field will be found. As a reference book it is worth while including in the library of the general practitioner.

A. E. SHIPLEY

That Heart of Yours.—By S. Calvin Smith, M.D. Octavo of 212 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1934. Cloth, \$2.00.

So much vague information concerning the heart and heart disease is prevalent among the laity, that the author has presented accurately much knowledge and information concerning this organ and its diseases in language which will tend to allay fears in one who believes that his heart is at fault. It is surprising how much the author has been able to include in this volume; the anatomy and physiology of the normal heart, explanation of valvular lesions, musculature failure and methods of conserving the action of a heart that is under normal. This work has information for the physician as well as for one who has not studied medicine.

HENRY M. MOSES

Child Guidance Clinics.—By George S. Stevenson, M.D. and Geddes Smith. Octavo of 186 pages. New York, The Commonwealth Fund, 1934. Cloth, \$1.50.

This book is a record of the origin and growth during the past 25 years of the child hygiene movement in the United States. It gives a detailed account of the establishment of the clinics in various parts of the country, of the aims of the clinics to acquaint the local communities with the nature of maladjustment in children and the best means to combat them. Those who devote themselves to psychiatric problems as they affect children, will appreciate the enormous tasks that faced the pioneers in this work. The cooperation of the parents, of the teacher, and others in authority are needed to achieve practical results with prepsychotic and maladjusted children. This book is recommended to all interested in mental hygiene work.

JOSEPH SMITH

The Social Adjustment of the Tuberculous.—By Beulah W. Burhoe. Octavo of 55 pages. New York, National Tuberculosis Association [c. 1934]. Paper, 50¢.

This book is a brief summary of the various schemes attempted in our country toward rehabilitating the "arrested" tuberculous patient and fitting him for future economic independence. A realization that no one plan has yet been developed that will fully cover this group of physically handicapped, dawns upon the reader, as does the fact that every scheme yet devised is economically unsound and dependent upon charity. It is a well compiled review of this special problem.

CHARLES E. HAMILTON

Handbook of Therapeutics.—By David Campbell, M.D. Second Edition. 12mo. of 444 pages. Baltimore, William Wood & Company, 1934. Cloth, \$4.75.

The revised edition of this book has been brought up to date by numerous additions. It is a good handbook, and the author is very economical of words, but of its four hundred odd pages, about a quarter are devoted to general considerations and the remainder cover the treatment of diseases usually classed as medical, including the subheads of neurology and endocrinology. It is a question whether the amount of information which could possibly be crowded into this space could be worth the amount asked for the book, except to a student who must be able to satisfy an examiner with one type of treatment for each disease. As a guide to treatment it is a bit thin.

TASKER HOWARD

Collected Papers of the Mayo Clinic and the Mayo Foundation.—Edited by Mrs. Maud H. Mellish-Wilson and Richard M. Hewitt, M.D. Vol. 25, 1933. Octavo of 1230 pages, illustrated. Philadelphia, W.B. Saunders Company, 1934.

The volume of the Collected Papers for the year 1933 brings together a most interesting assembling of material in the various branches of medicine, covering all phases. The presentation, in short form, appeals to one in looking over the book. Because of the wealth of clinical material and the thoroughness of the study, the conclusion adds to the wealth of medical literature. The volume is valuable for short reading at odd moments. Those who have had occasion to read previous copies can appreciate the opportunity afforded in the perusal of present issue.

E. W. SKELTON

A Short History of Some Common Diseases.—By Divers Authors. Edited by W. R. Bett. Octavo of 211 pages. New York and London, Oxford University Press, 1934. Cloth, \$3.50.

It is to be hoped that the briefness of these short accounts by distinguished English authors will tempt many readers who would perhaps side-step a more solid presentation. There is considerable variety in style; scholarly, sketchy, with adequate bibliography, or none at all, but all well written and interesting to the medical reader and no doubt to some laymen. That the book lacks ponderosity may be gathered from the editor's engaging inscription, "To my illusions which have in perpetuity enriched my life."

TASKER HOWARD

A Compend of Diseases of the Skin.—By Jay F. Schamberg, M.D., and Carroll S. Wright, M.D. Ninth Edition. 12mo. of 331 pages, illustrated. Philadelphia, P. Blakiston's Son & Co. [c. 1934]. Cloth, \$2.00.

This ninth edition of Schamberg's compend of skin diseases has some changes in the text, bringing it up to date; and a few of the photographic reproductions have been replaced by better ones.

The book fulfills its purpose very well by giving sketchy outlines of most of the skin diseases, which will serve one to make a differential diagnosis preliminary to closer study in a more comprehensive text. It will also serve the medical student well in grasping the essentials of the fundamentals of dermatology and the various cutaneous disorders. The tables of differential diagnosis are good and the outlines of treatment helpful.

E. ALMORE GAUVAIN

Practical Medicine Series.—Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Series 1933, Chicago, The Year Book Publishers [c. 1933]. The 1933 Year Book of General Therapeutics. Edited by Bernard Fantus, M.D. 12mo. of 464 pages, illustrated. Cloth, \$2.25.

In roaming through a book on therapeutics with its generous and diverse remedies, one wonders why there is such a liberal acceptance of substances supported by unfounded and extravagant claims. A critical evaluation reflecting a conservative attitude should therefore be welcomed. In the treatment of urinary infections, antisepsics have proved disappointing according to one author who is convinced that "water is still the physician's best friend."

There are still some physicians who cannot think of parting with old tuberculin, in spite of the fact that definite proof as to its efficacy is lacking. Maybe it's the thought of the "old reliable" that keeps them so attached to this agent.

That insulin therapy may cure diabetes is the contention of one author who reports twenty cases.

One author tells us what we have always known, i.e., that salicylates do not prevent rheumatic relapses.

Other than being a resumé of articles, this number of the Practical Medicine Series is devoid of stimulating interest. The editorial comments are few and far between, and there are very few contradictions to the claims for these various substances.

EMANUEL KRIMSKY

Essays on Chronic and Familial Syphilis.—By Griffith Evans. Octavo of 91 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$3.00.

This is a very interesting little book and will be read, I think, with equal interest by the syphilographer and the general practitioner.

The author takes the position that "chronic syphilis" and hereditary or familial syphilis may be diagnosed, if one is on the lookout for it, far more commonly than is ordinarily supposed. The Wassermann reaction is entirely negative in more than half of these cases. The diagnosis must be made on other physical signs and by exclusion. Many vague symptoms which have resisted all other forms of treatment, respond promptly to a short course of specific therapy. Whether one agrees with the author or not, it is a strikingly interesting book and well worth the time spent in reading it.

N. P. RATHBUN

Midwifery for Nurses.—By Henry R. Andrews, M.D., and Victor Lack, M.B. Seventh Edition. 12mo. of 268 pages, illustrated. Baltimore, William Wood & Company, 1934. Cloth, \$2.50.

When a book has reached the seventh edition, and has been translated into three foreign languages, it must have considerable merit.

In this new edition, Dr. Lack has followed Dr. Andrews plan and has kept the volume brief and simple. From its study, however, a nurse may learn all that it is necessary for her to know about pregnancy, labor, puerperium, and infant care.

The authors are to be congratulated on the simplicity with which they tell a very complete set of facts.

WILLIAM SIDNEY SMITH

THE TREATMENT OF CHRONIC INTRACTABLE HEART DISEASE  
BY TOTAL THYROIDECTOMY

DAVID D. BERLIN, M.D., and HERRMAN L. BLUMGART, M.D

*From the Medical and Surgical Services and the Medical Research Laboratories of the Beth Israel Hospital, the Department of Medicine, Harvard University Medical School, and the Department of Surgery, Tufts College Medical School, Boston*

Surgical intervention is undertaken for various purposes. One group of operations has as its objective the extirpation of abnormal structures, such as malignant tumors. Another group of surgical operations attempts to attain restitution of normal anatomic structure; the treatment of fractures falls in this category. A third group of operations has as its objective the restitution of certain normal physiological relationships. The treatment of chronic heart disease by complete removal of the thyroid gland is representative of this latter group. In patients with intractable congestive heart failure, the blood supply is inadequate for the metabolic demands of the tissues. In angina pectoris, the available coronary blood supply is not sufficient for the needs of the heart. By lowering the metabolic rate by total thyroidectomy, the discrepancy between tissue needs and blood supply is abolished and these two important fundamental factors are brought into proper relationship. Many aspects of the problem of treating patients with chronic heart disease by complete removal of the normal thyroid gland have been presented in other communications.<sup>3-6,10,11</sup> It may be well at this time to present an abstract of some of these problems with particular reference to the surgical considerations.

In two patients with congestive heart failure who were operated on in October and November, 1932, a minute residue of thyroid tissue was left at the upper pole or deep in the esophageal sulcus.<sup>3</sup> In both

instances, clinical improvement, paralleling a drop in the metabolic rate, was only temporary. This experience as well as that of other previous investigators indicated that nothing short of complete removal of every vestige of thyroid tissue would consistently accomplish persistent lowering of the metabolic rate. The use of x-ray, either as an adjunct to such maximal subtotal thyroidectomy, or employed alone, failed to be of any value.<sup>3</sup>

## SELECTION OF CASES

The operation at the present time should be undertaken only in such patients who in spite of every available treatment have failed to maintain improvement and are incapacitated. Patients with angina pectoris are by far the better operative risks, for they usually show no evidence of decompensation; patients with status anginosus or angina pectoris complicated by attacks of cardiac asthma are more serious risks. Patients with congestive failure, however, must be selected with great care. Removal of the thyroid gland presumably does not alter the underlying cardiovascular pathology. If the underlying pathological process is rapidly progressive, it will probably continue to be so after operation, and the patient will obtain improvement over only a relatively short period of time. Patients who give a history of short rapidly progressive disease are therefore unfavorable subjects. In this category are included patients with malignant hypertension, patients with short rapidly pro-

gressive histories of congestive failure due to arteriosclerotic, hypertensive, or rheumatic heart disease. Patients with syphilitic cardiovascular disease similarly are unfavorable subjects. The operation should not be undertaken in the presence of active pulmonary infection, or in the presence of clinical evidence of active rheumatic infection. Patients with impaired renal function and nitrogen retention are poor operative risks. Before operation, it is of the greatest importance to keep patients at complete bed rest until the signs of congestive failure disappear, so that operative complications will be minimized. Most of our postoperative deaths have been in patients who, in spite of long preoperative care, have nevertheless shown evidence of congestive failure as indicated by râles at the bases of lungs, enlarged liver, and signs of peripheral edema. Operation should be undertaken only after the patient's condition has been improved to the fullest possible extent.

Experience has shown that a basal metabolic rate of less than minus 15 per cent prior to operation is an unfavorable factor and that the operative procedure is contra-indicated when the metabolism is below minus 20 per cent. Success after total thyroidectomy predicates the presence of at least some reserve on the part of the weakened heart. The patient who preoperatively shows no evidence of such cardiac reserve, as manifested by failure to show improvement with complete bed rest and digitalis, is a poor operative risk and will probably not be greatly benefited by the operation. An ideal subject for this procedure is one who loses all signs of congestive failure on rest in bed, but regularly shows evidence of decompensation when he deviates from this régime. The patient has a basal metabolic rate above minus 10 per cent. In such a patient, a lowered metabolic rate may result in striking clinical improvement, with the capacity for reasonable activity and usefulness without return of failure.

#### ANESTHESIA

Earlier in this work gas-oxygen anesthesia, with adequate preliminary sedation, was employed. The use of local anesthesia in a few of the patients with severe hypertensive heart disease with congestive failure proved so satisfactory that it has since been generally adopted. The results in the

last 22 patients thus operated upon have been so satisfactory that we unhesitatingly recommend it as the anesthesia of choice in practically all cases.

#### OPERATIVE TECHNIC

Compared with the subtotal resection of a hyperplastic gland, total ablation of the normal thyroid is less troublesome, for bleeding is a less serious problem. The friability of the diseased hyperplastic gland often provides considerable technical difficulty which is not encountered in the removal of the normal gland. In total thyroidectomy, however, it becomes necessary to expose the recurrent laryngeal nerves and the parathyroids to great danger of injury in the process of removing every vestige of thyroid tissue.<sup>2</sup> While injury to one nerve is not attended by serious consequences, bilateral nerve paralysis is calamitous and the danger of its occurrence must be always regarded as imminent. To obviate this disastrous complication, direct laryngoscopic examination of the vocal cords is always made after the removal of the first lobe of the thyroid.<sup>7</sup> If there is evidence of one-sided nerve injury, the operation is terminated at this point and completed at a future date if the cord regains its function. Direct laryngoscopic examination should be adopted in cases operated upon under local, as well as in those operated upon under general anesthesia, since no apparent change in the quality of the spoken voice may occur after unilateral nerve damage. Reliance on the changes in the quality of the voice may lead to disastrous consequences.

**RECURRENT LARYNGEAL NERVES.**—Bilateral recurrent nerve paralysis has not occurred in this group of patients. There were 7 temporary one-sided vocal cord paralyses, possibly due to inadvertent pinching of the nerve during operation. There were 3 permanent unilateral cord paralyses; one followed accidental severance of the nerve, and another proved at postmortem to have resulted from ligation.

Appreciating that an accurate knowledge of the course, position, and possible variations of the recurrent laryngeal nerves are of great importance to the operator, careful studies of this nerve were made in the dissecting room during the past 2 years.<sup>2</sup> Detailed dissections of 140 nerves in 70 cadavers disclosed that 10 per cent par-

trially penetrated the gland, and 25 per cent coursed through the adherent zone. The latter region represents the area of fixation of either lobe of the thyroid to the trachea just below the anterolateral aspect of the bar of the cricoid cartilage at the level of the first and second tracheal rings. In this region the nerve may be concealed beneath a curtain of fibrofascial tissue. If one is to reduce the incidence of nerve damage, both of these 2 positions of the nerves must be constantly borne in mind. To identify and preserve them intact, it is necessary to explore the gland substance in its deep posteromedial aspect and the adherent zone by means of careful blunt dissection. Fortunately, the majority of the recurrent laryngeal nerves (65 per cent) are found coursing safely in the tracheo esophageal sulcus, in which position the nerve is best protected against serious operative injury.

In approximately 35 per cent of the patients operated upon, a pyramidal lobe was found. Since this structure is capable of sustaining the metabolic level, careful search should be made for it during operation and, if found, traced to its uppermost limit and removed. The fixation of the gland may be so marked and the gland substance extend so deeply in the groove between the trachea and the esophagus that the operator may be tempted to leave a remnant of thyroid tissue in this area because of fear of injury to the nerve. This fragment, however, must be extirpated for it may be sufficiently liberal in size to preclude the development of a permanent lowering in the basal metabolic rate, without which lowering a successful therapeutic effect is not to be anticipated.

**THE PARATHYROIDS**—These small, yellowish brown, finely granular, flattened, pea sized glands which receive their blood supply from a slender arterial twig usually arising from one of the terminal branches of the inferior thyroid artery, are most commonly located near the level of the lower poles of the thyroid gland. At operation, approximately 66 per cent of the parathyroids were identified in this area, 22 per cent were found on the posteromedial aspect near the junction of the middle and upper thirds of either lobe, and the remaining 12 per cent scattered in atypical locations. It has been noted that parathyroid bodies may be found in the

superior mediastinum, beneath the trachea or esophagus, on the anterior aspect of the thyroid gland, or embedded within the split layers of the true capsule of the gland.

One hundred and sixteen parathyroid glandules were identified and preserved at operation in this group of 60 patients. In only one patient none was identified at operation, and no signs or symptoms of tetany developed postoperatively. It is now felt that deliberate search for the parathyroids is not especially indicated, because it may result in at least a temporary interference of their function by disrupting their lymphatic blood or nerve supply. On the other hand it is essential to possess an accurate knowledge of their appearance and be able to distinguish them from neighboring lobules of fat and islands of aberrant thyroid tissue, lest they be sacrificed unnecessarily. When identified embedded in the thyroid gland or enclosed within the split layers of the tunica propria they should be dissected out and reimplanted in the sternomastoid muscle, they should be similarly reimplanted if they are accidentally removed during operation.

A routine examination of each patient for clinical signs of developing tetany is made at frequent intervals each day during the first postoperative week. At the time of each examination the patient is directly questioned concerning the presence of sensations of numbness or tingling. If signs or symptoms of tetany are elicited, calcium chloride solution (8 c c of 35 per cent solution every 3 hours) is administered orally. If signs or symptoms persist, calcium medication is increased, calcium chloride solution intravenously (10 to 20 c c of 10 per cent) may be indicated occasionally. Medication is gradually reduced, and omitted when the signs of parathyroid insufficiency remain absent.

In the first 60 cases operated upon, 10 patients developed some of the signs or symptoms of parathyroid insufficiency. No case with spontaneous carpopedal spasm or convulsions was encountered. In 9 of these 10 patients, parathyroid insufficiency was transient, all clinical signs and symptoms disappearing within the first 2 postoperative weeks. One patient, now 9 months postoperative still requires calcium medication to control mild symptoms of hypoparathyroidism.

## POSTOPERATIVE CARE

The postoperative treatment of our patients demands the same careful supervision that all patients with heart disease require. In addition, the level of metabolism in each patient must be carefully regulated.<sup>5</sup> By the administration of small doses of thyroid daily, practically all patients can be maintained at a metabolic level of minus 25 to minus 30 per cent, at which level the untoward signs and symptoms are controlled.<sup>6,9</sup> Without thyroid medication, we have found that practically all patients will eventually develop myxedema, with weakness of the legs, emotional irritability and mental slowing. This metabolic level, while freeing patients from the untoward signs and symptoms of myxedema, nevertheless requires less work on the part of the heart and releases this organ from much of its previous burden.

## RESULTS

Of 40 patients that were operated upon for congestive heart failure, 22 have maintained their compensation 2 to 17 months after operation; 5 had temporary recurrent decompensation and at present are well and active; 6 died at one to 11 months subsequent to operation; 2 showed no improvement; and 5 are too recently postoperative to evaluate the extent of the clinical improvement. All of the 22 patients who have maintained compensation are either working or able to work.

A survey of the results in 20 patients with angina pectoris shows that there was marked improvement in 13 patients who have now gone 2 to 17 months postoperatively. They have had no anginal attacks and have required no nitroglycerin. In 4 patients there was moderate improvement; in 3, little or no improvement. There were no operative or subsequent deaths in this group.

In a series of 60 patients, 6 operative deaths have occurred. All of the deaths occurred during the period of our earlier experience in patients with advanced congestive heart failure. On the basis of our present criteria for the selection of patients for operation, 4 of these patients undoubtedly would be denied this therapeutic measure, because their congestive failure was so severe that only moderate improvement was evident after prolonged bed rest and diuresis. Cardiac failure and bronchopneumonia, as disclosed by autopsy, was the

cause of death in all 6 cases. The last 22 consecutive patients have been operated without mortality.

68 BAY STATE ROAD

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## DISCUSSION

DR. WILLIAM BARCLAY PARSONS, *New York City*: I was glad to hear the author stress the need of the greatest care in, first, the selection of cases, secondly, their study and preparation, and thirdly, the important points in the operation itself. It must constantly be kept in mind that the production of a profound hypothyroidism is not to be undertaken lightly, that there are definite handicaps associated with it, and that it is expensive to control it with organotherapy. However, it is a price that may be worth the paying for liberation in one group of cases from bed-fastness and in the other from unbearable or crippling pain. If the individual has become completely dependent on other people, economically, physically, and spiritually, any easing of his situation is a real boon, not only to him but also to his family.

We have only a small series to report at this time, merely 6 cases with no operative deaths. One case unfortunately developed lobar pneu-

monia on the 28th day postoperatively from which he succumbed. However, he had been up and about, and even walking out of doors, so he need hardly be counted as an operative fatality. Although the series is small, we do feel that we have one important point to offer in the preparation and care of these cases, namely, the use of oxygen. Dr. Alvan L. Barach, of the Presbyterian Hospital in New York, who suggested this procedure, will discuss the subject at greater length but has kindly permitted me to quote him. He conceived the idea of carrying these patients in the oxygen chamber because of his experience with oxygen therapy in heart disease, having used it to control severe decompensation. On theoretical grounds this is in harmony with the findings of Blumgart and his co-workers insofar as the heart load is concerned in reference to blood flow. By raising the arterial blood oxygen the diminished blood flow rate becomes adequate to supply the tissues with oxygen. Barach observed diminution in edema and cyanosis, increase in vital capacity and restoration of compensation. Many of his cases decompensated again after removal from the oxygen room, showing that this method was merely of temporary benefit, but that it might be of real use in preparation for a procedure designed to lower the heart load.

He therefore suggested that the patients who after study were scheduled for total thyroidectomy be placed in the oxygen chamber at a concentration of 50 per cent, that they be operated on receiving oxygen by nasal catheter, and then returned to the oxygen room for several days after operation. The rationale of this course is as follows. First, the preoperative treatment of the cardiac with oxygen produces in a large number of cases a state of ecompensation, even in patients who have failed to respond to other treatment. Operations on patients who are decompensated are attended with a very high mortality rate. Secondly, the inhalation of oxygen during the operation decreases strain on a damaged heart. Since the normal heart has a slower heart rate in an oxygen enriched atmosphere and since the damaged heart shows an improvement when it is experiencing difficulty in meeting the demand for an adequate blood flow when oxygen is administered, it seemed a physiologically rational procedure to mitigate the strain incident to an operative procedure by supporting the cardiac muscle at the time of operation. The cardiac muscle is especially sensitive to lack of oxygen, and to provision of an increased oxygen supply. Thirdly, the inhalation of oxygen after operation seemed indicated to sustain a heart already near to insufficiency by decreasing the effort made upon it. The essential load the heart has to assume is the provision of oxygen to the tissues by maintaining an adequate blood flow. If an increased supply of oxygen is afforded by increasing the amount of oxygen in the arterial blood through the inhalation of an atmosphere two and a half times that ordinarily present in air, the heart is able to contract both less frequently and more efficiently in the performance of the additional work incident to the operation.

The preoperative, operative, and postoperative treatment with oxygen of the patient with heart disease who is subjected to an operation appears justifiable because it fosters in the cardiac muscle an improved tone or function, before operation during it and after operation. The physiological

response of the normal and the damaged heart to a provision of an increased oxygen supply is the foundation of the procedure. Undoubtedly, many cardiac patients will weather the storm without oxygen, but the fact that a greater mortality has been demonstrated in patients with heart disease, even in the stage of compensation, both in routine operations as well as thyroidectomy, is justification for minimizing the procedure's hazard with a remedy that is known to support cardiac function. Once cardiac failure has begun, following operation, it is more difficult to alter the downward course than it is to prevent it.

The results have proved distinctly satisfactory. One patient with auricular fibrillation showed a rise in the apical pulse on the day of operation up to 100, but the others have failed to show even this slight reaction.

We have refused operation on one patient who failed to show satisfactory improvement under oxygen. In addition to advanced, though apparently stationary cardiac decompensation he also had severe renal disease. After a few weeks in the oxygen room he still had his edema, and his blood showed rising nonprotein nitrogen values. As he fell into one of the classes already mentioned by Dr. Blumgart as having a poor prognosis operation was withheld for the reason that we feel that it is of real importance to employ surgery only when there is a reasonable basis for assuming some cardiac reserve. Until more data on the results of this procedure are available we should be most conservative in extending the field of operability.

I was glad to hear Dr. Berlin state that he is using local anesthesia. It is certainly adequate, the patients for the most part have attained a definite detached objective point of view far removed from that of the hyperthyroid or ordinary thyroid patient, and require all the oxygen they can possibly obtain. If the theories upon which this whole procedure is based have merit, then any type of inhalation anesthesia is contra-indicated, as no step should be omitted which may contribute to the factors of safety. Dr. Berlin has pointed out the necessity of the utmost care in respect to the parathyroids and the recurrent nerves, and the difficulties in the zone where the lateral lobes are adherent to the trachea. These points are thoroughly well taken and deserve strict attention. I have found that in total, as well as in subtotal thyroidectomy division of the isthmus is a step that simplifies the difficult part of the operation. After liberation of the superior pole, if the isthmus is divided the lobe may be raised and easy access obtained medially and laterally to the area occupied by the parathyroids, to the course of the nerve and that trying area where the gland is adherent to the trachea. As these glands are small and pliable, though not friable, it is then a relatively simple matter to attend to the vessels running from parathyroids into thyroid, or to dissect out an embedded parathyroid, as one can see both sides of each structure.

Our results are of too short a period to warrant reporting except to state that the three cases of chronic decompensation, all women, have been liberated from bed, and one angina case of over two months standing has been relieved of pain. We have not as yet stabilized them on their dosage of thyroid extract.

## MAN AS A COMPLETE ORGANISM—IN HEALTH AND DISEASE

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When a new patient enters the consulting room there is an instant, measured by the twinkling of an eye, in which the physician receives a sharp impact from the approaching personality. At that moment it is not a question of "what ails the man" but rather "what manner of man is here." By the time the patient has crossed the room, we have observed his size, general shape or outline, facial design and expression, posture, gestures and gait, and "personal aura" which is perhaps a composite of his natural temperament and the momentary state of his emotional tension. This first and invaluable impression is formed in the field of perceptive or intuitive knowledge. In most cases all our subsequent investigations serve to confirm the swift, original perception. But there are enough misleading judgments of this sort to enforce a thorough study of the total personality of every patient. This, I believe, is just as necessary a part of the physician's task as examining the evidence of pathological processes.

Until the advent of laboratory methods, our predecessors in medicine drew freely upon their knowledge of the man to help them in the management of the patient. The great doctors of the past were not afraid to rely upon perceptive knowledge. But in a curious way much of this courageous reliance upon one of our most valuable endowments has dwindled under what is perhaps a false interpretation of science. But before proceeding further to develop the main theme of this essay, a brief inspection of two basic systems of thought is essential to its purpose. The first is concerned with the two types of knowledge, to one of which reference has just been made. Schopenhauer<sup>1</sup> has discussed them fully under the names "perceptive knowledge" and "abstract knowledge." The former expresses a deeprooted biological asset which is not subject to reason or cultivation; the other is a measured quality, teachable and purely rational. The growth of all understanding of life has depended upon the interaction of both sorts of knowledge.

Notwithstanding, however, the firm reliance which Man, in company with other animals, has justifiably placed in the perceptive type of knowledge, he continues to seek for a kind of certainty which, rightly or wrongly, he believes can be more surely found in reason. So far as natural phenomena outside himself are concerned, one can readily understand his attitude. The obvious yet unexplained menaces to life and well-being which he has met and still will meet in his environment, lose much of their terror for him when they are rationally explained; furthermore, many of them have been rendered innocuous through the practical application of abstract knowledge. But the important factor in his environment, which cannot be fully dealt with by the exercise of reason alone, is his fellow man. One does not have to seek far for an explanation of this serious failure or limitation to the force of Reason. It is to be found in that irrational other side of himself, that submerged portion of his own mind, where feeling and emotion reside, where perceptions are received, and whence imagination takes flight. And yet even the phrase "that irrational other side of himself" connotes a division of that very wholeness which it is our purpose to consider.

In the progress of civilization, the demand for certainty continually increases. Furthermore, it has become stronger in proportion to the success with which, in the sense of abstract knowledge, the Unknown has been converted into the Known. The fodder for the certainty appetite has been supplied by Reason. Consequently the reasoning faculty, and its accepted expression—Science—has become the shibboleth of modern times. It follows from that, that Man, striving continually to turn Imponderables into Ponderables, and often successfully achieving the result, becomes increasingly unwilling to admit the existence of the former. He therefore grows more and more skeptical of perceptive knowledge, or empiricism.

Clearly there is a strange lack of logic in this trend of Man's thought; for, whether



he will or not, the subcerebral machinery of the sympathetic nervous system, endocrine glands, and nonstriated muscles, lying at the psycho-physiologic border, will always move swiftly to solve a vital problem before rational thought process can begin to formulate an explanation or direct a course of action. On the other hand, the ultimate solution of difficulties such as epidemic disease or poisoning by the venom of serpents, rests upon knowledge of the

relationship between a subconscious fear and peptic ulcer. Yet for many years doctors have been aware that there was a connection between what they have called "worry" and that particular malady. Furthermore, it is common experience that diets and careful attention to acid-base balance will not surely cure the ulcer. From the illustrations just given it is apparent that situations may arise in the course of life which call for either one or

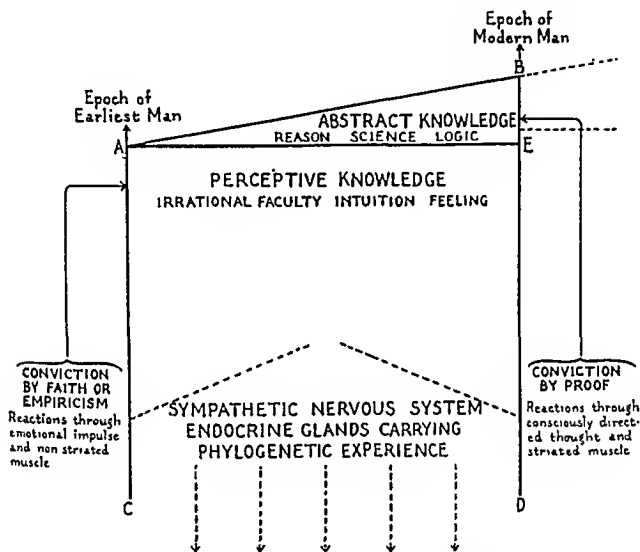


Fig. 1.—Diagram showing the structure of the Knowledge Bud.

abstract type, which satisfies Reason and is applied by it. Primitive man well knew the menace carried by these forces of nature, but his perceptive knowledge of them did not suffice to give him security. The magic processes devised by his imagination to combat them were inadequate. Even the "gods" failed him there. Yet in dealing with those diseases which arise from physiological faults flowing in turn from emotional maladjustment, Science is scarcely in better case. There is no mechanism of rational thought which can express in mathematical terms the causal

the other, or both kinds of knowledge—"perceptive knowledge" and "abstract knowledge."

Perhaps a diagram may help to clarify the notion of the two, which together make up the whole knowledge content: (Fig. 1.)

The irregular trapezoid A, B, C, D, represents the complete mind. The quadrilateral area, A, C, D, E, represents the unreasoning portion. Its lower side is left open to indicate that its content extends infinitely deep in the phylogeny of man. The triangle, A, B, E, represents the rational part of the mind and its shape

implies a gradual growth from the time of the earliest human beings.<sup>2</sup>

The second system of thinking involves two different attitudes in biology. One, known as *elementalist*, attempts to explain the organism by an analysis of its parts; the other, known as *organismal*, holds that the organism is greater than its parts and determines their nature. Thus these opposing schools of biological thought provide two avenues of approach to the study of any living organism—Man, let us say.

The *elementalist* starts by taking him to pieces structurally and functionally. Anatomists have shown that he has a skeleton, muscles of two sorts, internal organs, and a nervous system with two divisions, and objects called endocrine glands. Physiologists have demonstrated the function of many of these parts. Histologists have reduced man to smaller pieces, called cells. Finally, the bio-chemists and physicists have split him into those lesser units, atoms and electrons. Furthermore, psychologists have dissected his mind and emotions. Indeed, we can truly say from this point of view, that we know all about Man.

The difficulty, however, with this sort of knowledge of human beings, is that the skeleton, the muscles, or the organs are only those and quite useless until each and all combine and function smoothly together in the service of some particular person. From this standpoint, it will be seen that there is no resemblance in kind between the human heart or stomach, let us say, and the whole man. But there is a clear resemblance in kind between the heart muscle cell, or the peptic cell, and the whole man. This resemblance is due to the fact that each is a complete organism, each has a structural organization, functions purposefully, and subordinates to its needs the elements of which it is composed. The human heart and stomach, on the other hand, obviously can function only as integral and subservient parts of the individual human being. The notion is expressed in slightly different terms by stating that no two stomachs or intestines, and no two hearts react similarly to any ingested food or poison or emotion. This is true because the heart or gastro-intestinal tract are but representative segments; actually the whole person is the circulatory or digestive mechanism. And as the whole man responds to the pressure of the whole environment, so will any of his parts

respond—for each cell and system within him is stamped indelibly with his special mark. This has been called the *personality*.<sup>3</sup> The biological basis for this conception is doubtless to be found in the gene which will be further discussed in another article.

Thus it becomes evident that even the most painstaking studies of its elements do not fully enable us to comprehend that living whole which never ceases to display its distinguishing particularity. The school of biological thought known as *elementalist* undoubtedly provides the physician with a much needed knowledge of the parts of our complex machine. But it leaves us like children who have taken a watch apart—helpless and dismayed among the mass of tiny pieces, meaningless and useless in themselves. The expert watchmaker, however, not only possesses a knowledge of the parts, but knows how they should stand and function in relation to one another. He knows the connection, and integrations of cogwheels, and springs, and jewels; finally in the special make of the watch he recognizes the unique organism to which all of the parts are subordinate.

Nicola Pende, in Genoa, has epitomized the point in the aphorism printed over his lecture hall: "Anatomy and Physiology separate the organism—The Clinic reunites them." The *organismal* point of view in biology has been most ably presented by W. E. Ritter<sup>4</sup> and by E. S. Russell.<sup>5</sup> At the outset of his book (p. 27) Ritter says: "If my basal proposition be true, that the organism taken alive and whole is as essential to an explanation of its elements as they are to an explanation of the organism, then it would follow that all attempts to assign explanatory values to the elements in their relation to the whole organism, while at the same time denying either expressly or tacitly, similar values to the entire organism in its relation to the elements, must fail in large degree."

In discussing the same subject, Russell says of Aristotle: "He gave creative function the priority over structure; he held that the whole was greater than its parts." (p. 17). And again in Russell's own definition of organism. . . . "The actions of the whole have a unique character, which renders them irreducible to processes of lower order." (Page 172.)

In further support of the importance of the *organismal* point of view, we may quote from Whitehead<sup>6</sup>: "If we wish to throw

light upon the facts relating to organisms, we must study either the individual molecules and electrons, or the individual living beings. In between we find comparative confusion." A similar thought is expressed by E. B. Wilson<sup>1</sup> in discussing multicellular organisms: "The real unity is that of the entire organism and as long as its cells remain in continuity they are to be regarded, not as morphological individuals, but as specialized centres of action into which the living body resolves itself, and by means of which the physiological division of labor is accomplished." The notion of specialized centres of action advanced by Wilson as an interpretation of the cell is reflected in the discoveries of Vogt, Spemann and of Coghill. Vogt<sup>2</sup> shows by means of appropriately applied dye stuffs that early amphibian embryos are composed of a mosaic of discrete cell masses, and that each one of these cell blocks goes on to the formation of a specific adult part or system. The predestination of each block apparently is constant so that the presumption seems justified that this segment of the embryo will develop, for example into liver, that into heart, and another into central nervous system. Spemann<sup>3</sup> then found that if presumptive abdominal skin from one gastrula were transplanted into the region of the future medullary plate of another, the transplanted skin developed into some part of the central nervous system. It is as though the gastrula receiving the transplant forced the alien cells into subservience and conformity with its needs as a complete organism. Further discoveries of Spemann, especially in connection with his "organizer" principle will be discussed in a subsequent essay. Still more impressive support for the organismal point of view is found in Coghill's<sup>10</sup> studies of the behavior of *Amblystoma* embryos. He traces the development of body movements from the non motile to the adult stage in relation to the growth of the central nervous system. At one point in his argument the following passage occurs: "In like manner, the tissues of the tongue receive branches from motor neurones that are engaged in integrating the trunk long before the tongue has muscle tissue in it. It is therefore the potentiality of the functional neurone to grow in embryonic fashion that gives to the organism as a whole its ability to subjugate new parts and thereby maintain its

unity during the development of behaviour. Such growth of the already conducting neurones accomplishes then, the primary function of the nervous system: the maintenance of the integrity of the individual while the behaviour pattern expands."

An interesting illustration of this principle of organismal unity drawn from the field of pathology, is seen in the recent observations of O. H. Robertson<sup>11</sup> on the behaviour of pulmonary alveolar epithelium during pneumonia. These cells, in health perform the highly specialized function of aiding in the exchange of gasses between air and blood. During pneumonia Robertson observed that they take on a vigorous phagocytic action and are largely occupied in the successful resolution of the pneumonic lesion. It is as though at the call of the organism (or nation) fixed or sedentary factory workers enlisted in the capacity of shock troops for the good of the whole.

Sherrington<sup>12</sup> and Cannon<sup>13</sup> have each advanced illuminating evidence in support of the concept of organism by their masterly demonstrations of the integrative functions of the central nervous system, the sympathetic and the endocrine glands. In the field of psychology the same tendency of contemporary thought to envisage the human psyche as part of the total organism is reflected in the school of "Gestalt" psychology. The writings of Martus,<sup>14</sup> Wertheim,<sup>15</sup> Koffa,<sup>16</sup> and Kohler<sup>17</sup> seem to express an effort to forestall the danger of special schools in psychological research and practice, and so to avoid the pitfalls into which the elemental system of biological thought has led us in clinical medicine.

Studies in human constitution or clinical organismalism which are going forward today, impelled by the first impulse from Hippocrates,<sup>18</sup> began again to emerge vigorously immediately after the close of the great war. Ritter's book appeared in 1919 and in the same year the first publication in this country on the clinical aspect of the subject from the Constitutional Clinic, at the Presbyterian Hospital in New York. In this the following sentence appeared: "The study of the individual dominates and surrounds the study of his affliction, and it is amazing how frequently the particular pathological disturbance belongs irresistibly in the whole fabric of his personality."<sup>19</sup>

From 1920 until today the literature on the subject of constitution has grown enormously through contributors from almost every branch of medicine. It is interesting to reflect, consequently, that from the time of Virchow's offering of the cellular theory, to the time of the great war, medicine was powerfully dominated by the elementalist philosophy. Since then, perhaps due to some unconscious integrative trend engendered by the cataclysm of war, the organismal concept has been growing rapidly in the minds of medical men the world over. Perhaps the conflict which

The crash of the great war marked its end and marked the decisive turn of human life into some new direction, as yet not fully understood . . . The prolongation of outworn forms of life means a slow decadence in which there is repetition without any fruit in the reaping of value. There may be high survival power."

With these general remarks concerning the two ways of studying human beings, and having stated that our position is firmly in support of the organismal concept, let us return to a more detailed examination of our problem. (Fig. 2.)

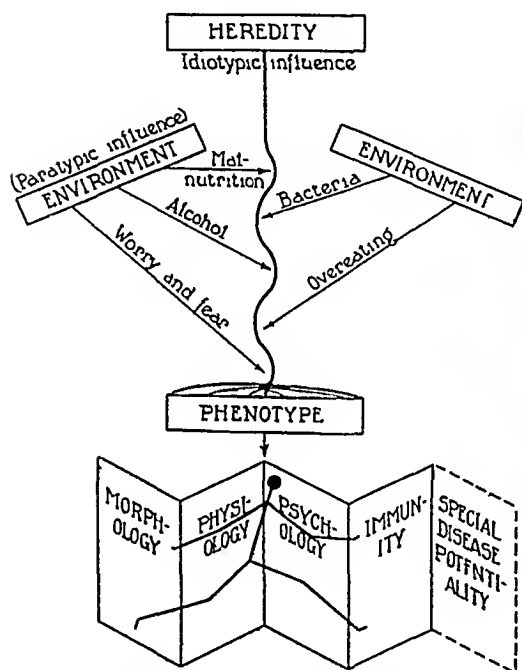


Fig. 2—Schematic Representation of the four Panels of Personality indicating how the Phenotype results from the interplay of Heredity and Environment

has existed between students of constitution in medicine and the present organization of academic medicine is merely the reappearance in another guise of the age-long controversy between the elementalist and organismal philosophies. Constitution study is in reality merely clinical organismalism.

In this connection it is not without significance that Whitehead<sup>20</sup> writes in his latest book: "The 19th century was an epoch of civilized advance . . . humanitarian, scientific, industrial, literary, political. But at length it wore itself out.



Fig. 3.—Contrasted Gallbladder and Peptic Ulcer types. (Note rounded contours and feministic expression of the Gallbladder case on the left.)

In our efforts to evaluate the essential quality of the individual human organism, we originally resorted to the plan known as the panels of personality. This involved coordinated studies of the morphology, physiology, immunity, and psychology. Because it was simplest and most obvious, we began with observations on size and shape. Very soon we rediscovered the ancient truth known to Hippocrates that there are two kinds of people: long thin ones, and short thick ones. Looking back from our contemporary position, the figure of Hippocrates perhaps marks the crystallization of the concept "Man, that infinitely variable organism without which human disease is impossible." But that there were differences between individuals of the species was common knowledge long before the great Greek physician pointed out some of the relationships which these differences bore to health and disease. Men recognized, for example, such ex-

tremes as strong people or weak, tall or short, capable or ineffective, cruel or kindly, coarse or sensitive, logical or imaginative. These varying qualities were seen to be combined in ever-changing patterns and the resulting individuals, through the ages, have been roughly classified by a kind of natural or folk feeling about their appearance and behavior. Many classifications of mankind have been presented and the following table shows that they are all based on different names for the same things (Table I).

But clearly, such a designation of type

(Fig 3) Not only did these contrasts hold for the physical form, but also they were correlated with psychological qualities which agreed in general with those described by Kretschmer<sup>21</sup> (Fig 3). In other words, so far as the long thins and short thick were concerned, classification by the disease potentiality method resulted in the demonstration of the same two basic types as did the direct observation of mankind from a non clinical viewpoint.

But the qualities which definitely marked patients suffering from the other diseases were woven irregularly through the fabric

TABLE I—SHOWING DIFFERENT NAMES FOR THE BASIC HUMAN TYPES

A de Haller (Suisse) 1750 Halle (Francais) 1797	Type thoracique	Type abdominal	Type athletique Type musculaire	Type nerveux et cephalique Type nerveux
Cabanis (Francais) 1802 P. Thomas de Troisieuvre (Francais) 1821	Type thoracique	Type abdominal	Type musculaire	Type cranien
Rostan (Francais), 1826 De Giovanni (Italien) 1877	Type respiratoire	Type digestif	Type musculaire	Type cerebral
Benecke (Allemand) 1878	I combinaison	III combinaison	II combinaison	I type
Virenus (Russe) 1904	II type	Normal	Type musculaire	Type nerveux
Claude Sigaud (Francais) 1908	Type epithelial	Type connectif	Type musculaire	Type cerebral
Kretschmer (Allemand) con temporain	Type respiratoire	Type digestif	Type musculaire	Type cerebral
Classification des veterinaires soviets	Type asthenique	Type picnique	Type athletique	
D'apres les principes patholo giques (classification russe?)	Type faible soc (de laiterie)	Type faible et gonfle d'eau (de boucherie)	Type fort (de Travaux) Type normal	Type infantile
Bryant (American) 1913	Type asthenique	Type apoplectique	Type normal	
Bounak (Russe contemporain)	Type carnivore	Type herbivore	Type mesoplastique	Type subplastique
Beau (American) 1912	Type stenoplastique	Type euryplastique		
Stockard	Type hyperentomorph	Type mesentomorph		
Draper	Type lineal	Type lateral	Other diseases	
..	Type peptic ulcer	Type gallbladder		

based upon morphology is quite inadequate to cover all the many and subtle differences between individuals. It was for this reason that at the Constitutional Clinic we decided to approach the classification problem from the standpoint of clinical medicine rather than from that of anthropology, in the strict sense of the term. Instead of separating human beings into groups on the basis of their form, language, habits, etc., we selected their disease potentiality as the criterion. Thus all individuals with peptic ulcer were subjected to study as one group, all with gallbladder disease as another, and those with pernicious anaemia, diabetes, acute rheumatic fever, etc., into others. There were notable differences in personal identity between members of these different disease groups. Now it is significant that the basic types of Hippocrates were contrasted most sharply in the members of the peptic ulcer and gallbladder groups

of the total personality. Such individuals could not be definitely classified in Hippocrates' groups, although they displayed enough characteristics in common to be quite easily recognized. Finally there are individuals who cannot be classified either in one of Hippocrates' groups, or in our disease races.\*

Some of these are frequently designated as one or other of the many forms described by endocrinologists and students of the vegetative nervous system (sympathetic—and vagotonic). These groups of workers have contributed much during the past decade toward the study of the individual. Indeed, in some instances the endocrine balance has been credited with

\* The term disease race as we have employed it has been criticized as inappropriate if not incorrect biologically. We have used it to designate a collection of individuals who possess in common a sufficient number of remarkable and similar characteristics to justify grouping them together.

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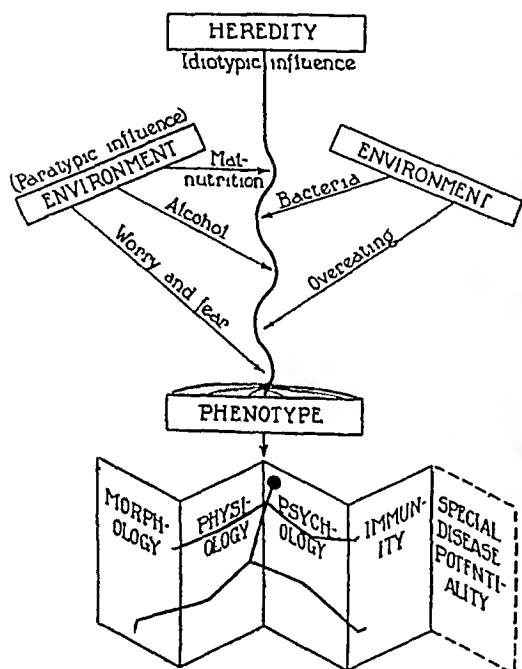


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interesting and effective procedures. Some of these are as old as mankind and have found expression in magic, mysticism and necromancy. Others appear in the later, more intellectual disciplines of the older formalized psychiatry, and in the teachings of Janet, of Mayer, of Jung, and of Freud and the whole school of psychoanalysis. Obviously then, the difficulty of classification exists because man is such a complex animal, and secondly, because he is rarely found today in pure-bred species.

It would seem, then, that there are three more or less general modes which can be applied in the effort to classify the diversified creature Man. First there is the simple division of Hippocrates, and second the patterns supplied by endocrinopathies. These two, perhaps, provide the gross criteria for the existing concepts of racial stocks such as nordic, alpine, mediterranean, negro and mongol. Third, and finally, there is the individual's personal essence which defies classification. This unique quality which I shall designate by the letter "C" because for clinical purposes it is constant, and must be recognized and respected for itself alone. The organismal viewpoint and its clinical expression, constitution-study, consequently can be thought of as the science of the individual. The successful appraisal of any person is greatly facilitated by keeping these three systems in mind. But even with the assistance of these rational concepts, the essential quality often escapes us. It is a subtle thing and sometimes is perceived and rendered best and quite unwittingly by the painter or caricaturist.

In further discussion, then, of this quality designated as "C," one can properly say that the patient who confronts a physician is unique. We know that he springs from two other human beings whose qualities he variously displays, and we can discover the conditions which have surrounded him in life. Yet we cannot fathom in the new individual that certain special completeness of person which cuts him out sharply from the mass and makes him stand apart and alone. This aloofness or otherness, which we have called "C"—is the essence of the new creature. It marks the difference between any two brothers, any two sisters, any two patients, or between the patient and his doctor. While one clearly senses this special otherness of each separate human being, no one

has ever been able, even by the most searching analysis of parts and functions, to capture and prove its quality. The "C" however, does not represent the complete organism. It is like a thread hung in a solution of salts and about which crystals form. Often at first its subtle lineaments may escape us, particularly if gross changes in the physical and spiritual state of the whole person occur.

Thus the completed organism may best be designated as "CV" of which the "V" component is variable. There are certain influences, whose nature we are dimly beginning to see, which may so radically modify the "CV" that its last expression almost totally denies the first. Striking examples of such changes are displayed, for instance, by wellknown endocrinopathies, acromegaly, myxedema, or the virilism of Gallais (Figs 5 and 6). On the more constructive side analogous modifications are seen in those often remarkable metamorphoses which take place at puberty, or following successful glandular therapy. Some of the best illustrations of the latter are found in cases of retarded development due to hypogonad function, or in Graves' disease, or childhood diabetes. From these experiences, or so called pathological examples, there extend in continuous gradation various degrees of changes in "CV." Finally, there are those slight and transient alterations which the layman notices by the remark—"what ails so-and-so, he's not been himself lately."

Yet notwithstanding the changes in "CV"—of whatever degree—there always remains an indelible residue of the original and unique individual "a shadow of his former self,"—the "C." This is the basic personality, containing traces of racial stock, family traits, and the new unique quality possessed by each person. Pende believes that the racial factor is paramount and that no matter what distortions of form, color, or behavior are produced by developmental fault, accident to embryo, or experimental cross breeding, the stock from which the resultant deformation springs is still clearly recognizable. Thus, for example, red or white or purple-eyed *Drosophila*, or those with crumpled or absent wings, abnormal abdomen or reduplicated legs, remain irrevocably *Drosophila*. Furthermore, it has been clearly shown by the dog breeding experiments reported by Lang and more recently those of Stockard,

that the same principle holds for higher mammalian vertebrates. Thus, as Lang shows, if such widely different types of dogs as Dachshund and St. Bernard are bred together, it is still easy to distinguish through the grotesque confusion of characters in the resultant hybrid creature, the indestructible stampos of both parent races. (Fig. 7.)

The individual otherness which is so tenacious of itself and always appears with equal distinction either anew in the stranger, or continuously in old friend or

beyond recognition. Indeed the fiction of Dr. Jekyll and Mr. Hyde was but the poet's reflection of a natural occurrence. Similar, though slower-moving and more lasting, modifications of human beings are to be seen in various forms of insanity and physical disease. Yet shimmering through extreme degrees of change, the old friend or experienced clinician can always catch the indestructible pattern of the patient's original "C." One has only to remind the reader of the tall slender youth, with dark coloring and silent aloof demeanor who



*Courtesy of Lippincott*

Fig. 5.—Cushing's Case XXVI. Showing that the acromegalic patients development and which materially aid in diagnosis are no more striking than those visible between the Peptic Ulcer and Gallbladder types shown in Fig. 3.

brother, is a complete thing—a positive force which emanates as a total value. It projects its indissoluble flavor upon us, defying analysis, through a composite of form, posture, gesture, expression, tone of voice, odor, eyelight and turn of mind.

Less easy to define, perhaps, yet no less impressive are those swift and terrible changes in the appearance and conduct of a person who is overwhelmed by a powerful emotion. In the grip of sickening fear, the murderous passion, a transport of joy or religious inspiration, a person's appearance and conduct may be changed almost

does not mix well with his fellows at school. Some years later the shadow of that boy may be glimpsed in the sullen paranoid or rigid close-bent catatonic schizophrenic.

In the sphere of so-called bodily disease a similar picture might be drawn of the large, deep-chested, heavy youth, with very broad, short face, whose blue eyes are set far apart and whose pink cheeks and exceptionally fine, silky hair are the joy and pride of his mother. Yet his rather neutral, gentle, fireless disposition somewhat disappoints her. Many years



later, she or the old family doctor sees the shadow of that florid youth beneath the light, tawny skin, soft flaccid tissues, and pale, lusterless blue eyes of the patient with pernicious anemia.<sup>2</sup>

The composite of appearances to which reference is made above is common knowledge and mentioned first because it is found, as it were, on the surface or outside of the animal. But there are many other criteria which represent changes within the external envelope of the body and mind. These indirect evidences, such

from the ward, is in her accustomed place because of the strangely sibilant wheeze of her own personal asthma.

It must not be supposed, however, that through inherited factors alone is derived that peculiar difference which isolates the individual from all others. From the moment of special condition under which the egg is fertilized by the sperm, ever changing influences outside the developing embryo and subsequently growing child, act impressively upon it. How much responsibility for the quality of the finished

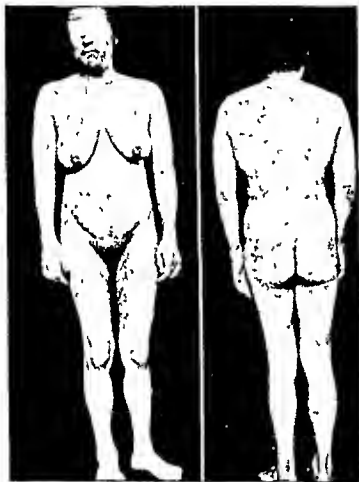


Fig. 6.—Patient with Gallais syndrome (double adrenal tumors) showing marked virilism. Note masculine aspect of hand, broad shoulders, narrow hips, development of inner belly of gastrocnemius, and extensive hirsutism.

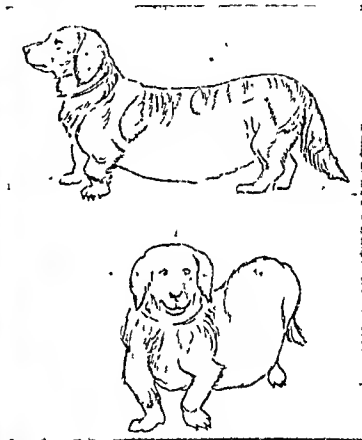


Fig. 7.—Showing result of inappropriate crossing.

(Rollmops, die Berguner Bastardhündin zwischen Bernhardtiner (male) und Dachshund (female). Nach Herrn "ein Bernhardtiner auf Dachshundbeinen." Nach Originalskizzen von Herrn Prof. Heim.)

as, for example, blood-pressure fluctuations, belching of gas, diarrhoea, and complaints of subjective distress ranging from intense pain to the lightest and most fleeting unusual sensations, are called symptoms. Yet even through these supposedly universal phenomena, the friend or family doctor can still detect the indestructible "C." At the sound of his staccato cough, in alternating groups of three and two, everyone in the hospital knows that old Mr. R. is approaching; or that queer Mrs. L., who always sits in the corner, half turned away

person at any given moment of his life (phenotype) should be ascribed to the inherited values, and how much to the effects of environment, is a question which still forms the center of active biological controversy. However, it is not the purpose of this essay to continue that historic discussion. My own belief is in accord with those who grant to heredity the major responsibility, yet recognize the powerful influence exerted by outside forces upon the embryo and developing child. Among the more usually recognized of these may

be mentioned changes in climate, food (vitamin lack), sunlight and altitude (oxygen tension). The application of this attitude to clinical problems is clearly indicated to us by the realization that natural historians have always insisted that it is impossible to think of a living creature apart from its environment. Indeed, the two are so intimately joined that it is no easy task to decide, for example at what stage oxygen from the surrounding air fuses as oxyhemoglobin with the structure of the organism, or when ingested carbohydrate becomes vitalized in the energy productions of mus-

variety of muscle, which is nonstriated, not under conscious control and carries out the vital processes supporting the life of inner existence and procreation. But this type of contractile tissue is strongly influenced by emotions. Yet it is not necessary that the emotions be perceived in consciousness to be effective in modifying the function of organs equipped with smooth muscle. Ordinarily, if the organism is in good emotional equilibrium, the body machinery moves easily at its work, quite automatically and unnoticed by the individual. But if there is a disturbance, no matter

### DIAGRAM SUGGESTING STRUCTURE OF THE MAN-ENVIRONMENT-UNIT OR THE WHOLE MAN

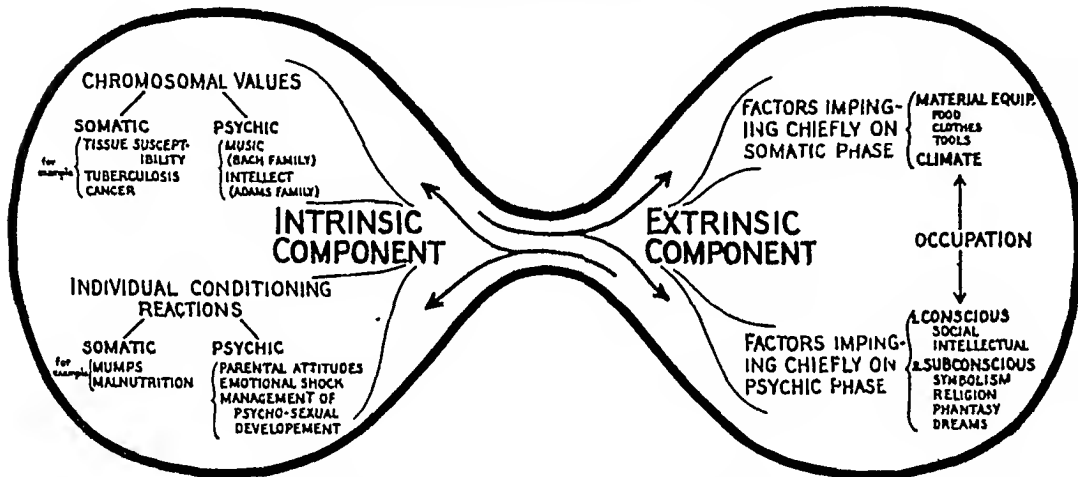


Fig. 8.—Note the arrows representing the flux of interacting forces which form the continuity between living organisms and their individual environments.

cle. Consequently, the investigation of a human being's constitution must include all the gross and subtle details of his environment—it becomes, in effect, a study of the "man-environment-unit." (Fig. 8.) The problem would perhaps be easier if the palpable universe comprised man's only envelope. But because of his imaginative faculty, his phantasy life, another vast imponderable, yet entirely personal universe, supplies an equally complex and poignant environment to which he must likewise make adjustment. To the pressure of the physical world he responds in general with consciously directed muscles. Such muscles are chiefly concerned with the life of gross or spatial relation to environment. The necessary reactions to the impact of his phantasy world are executed by the other

how minute, of the balance between the human animal and either of its two universes, signs of that disturbance are immediately apparent. Consequently, we may accept the thesis that disease is simply the expression of maladjustment between organism and surroundings, an overthrow of the delicately balanced structure termed the "man-environment-unit."<sup>27</sup>

Now, so far as the doctor's attitude to the patient is concerned, there is no doubt that it should be largely occupied with the forces which have produced the "CV" or total being. As has been shown, the "CV" can be changed almost beyond recognition, but this change seems to be brought about almost entirely in the sphere of the "V" component. The "C" factor, which is the essence of the individual, displays—for the

practical purposes of clinical medicine at least—complete fixity. In illustration of this tenacity, such racial or family characters as the famous Hapsburg lip, may be mentioned; or the muscular genius of the Bach family; and, from the realm of pathology, hemophilia. It is quite evident that no modifying influence from environment has ever made the slightest impression upon these unique hereditary insignia. It will be seen, then, that the representation of the whole man as "CV" one part of which expresses in part his racial stock or heredity, and the other the changes wrought by environment, is in principle similar to Tandler's<sup>28</sup> and Bauer's<sup>29</sup> idea of constitution and condition, or Sieman's<sup>30</sup> idiotype and paratypic values.

But by whatever forms they may be designated, there can be no doubt that both the forces of heredity and environment, interacting together, produce the man or woman who as a patient stands before the physician. Consequently, perhaps the doctor's most important concern should be their consideration. He should, therefore, be familiar with the general principles of genetics so far as they are now known, with the processes of growth and development, and with the kind of modifying influences which ordinarily flow from the physical and spiritual environment of human beings. Yet when these vast fields of knowledge are expanded beyond those now conventionally covered by physiology, chemistry, physics, and psychology—all relating intimately and fundamentally to clinical medicine—the physician is faced with a superhuman task. To be proficient in any one of those subjects is worthy of a man's life-long and undivided attention. Clearly he cannot be master of them all. Yet each one is germane to clinical medicine. Doubtless that is why specialism has developed in the fundamental sciences as well as in the study and care of disease involving separate parts of the body and mind. As a result, the whole man has been subjected to increasingly detailed analysis, has been divided into many parts, and the concept of wholeness lost. Consequently the physician, whose first interest is with the patient or whole human being, is forced to call upon the knowledge of the special workers. They, in turn, must help him to the utmost in his difficult task of evaluating and managing the individual. These matters which concern the "man-environment-unit" apply equally to the average person,

the genius and the defective, who may or may not become ill. Thus, not only do they logically precede the concept of disease, but they are essential to a proper understanding of its nature.

33 EAST 68TH STREET

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## VAGARIES OF APPENDICITIS

FREDERICK H. FLAHERTY, M.D.

*Syracuse*

It is generally believed that death from acute appendicitis has increased in late years. Vital statistics tend to confirm this statement; this, in spite of the great improvement in the technic in all surgical procedures. The preoperative and postoperative care, clysis, intravenous use of saline and glucose, and blood transfusions have saved many lives. The literature is voluminous with statistics from many clinics. Much of the literature deals with preoperative and postoperative care.

It is not my purpose to give statistics nor quote the literature on this subject with which most of us are familiar. The author shall endeavor to point out some of the factors that cause confusion and delay in the diagnosis of acute appendicitis. The diagnosis of a typical acute appendicitis can often be made by the patient or one of the family. Many of us have had such experiences and have confirmed the diagnosis upon operation. Nevertheless, the fact remains that early diagnosis in many cases of this disease, even in the best clinics, taxes the ability of the physician and surgeon. What physician or surgeon even with considerable experience in operating for acute appendicitis, can say that he has never missed making an early diagnosis or has operated for acute appendicitis and has found a normal appendix? It can not be done unless his experience is very limited.

In the hands of the well-trained surgeon, mortality in appendicitis does not come from preoperative or postoperative care. It comes from delayed diagnosis either by the attending physician or the attending surgeon and not infrequently by confusion caused by too many different opinions from the staff. Dr. Harold Newhoff of Mount Sinai Hospital, New York City, in a recent article states, and rightly so, "that intra-peritoneal suppuration, and not some distant complication, is the usual cause of death after operation for acute appendicitis." The surgeon or physician, who signs the death certificate in cases of death following operation for acute appendicitis as cardiac failure, renal insufficiency, ob-

struction or even pneumonia (except in unusual cases) is not stating the fact.

Variations in the anatomy of the appendix may be the cause of some of the vagaries of its disease. The circulation of this organ varies greatly in different individuals. A large mesentery with plenty of blood supply appears to be less liable to infection than does the appendix with a short mesentery—a small opening into the cecum will prevent the proper emptying of this organ, thus rendering the appendix vulnerable. There exists in certain strains of the human race a greater tendency to appendicitis than in others. It is not unusual to have three or four children in the same family affected with this disease during young life—on the maternal side the same history even back to the maternal grandparents with no history of it occurring on the paternal side or it may be reversed. In taking the history of a doubtful suspected case of appendicitis, a history of appendicitis occurring in other members of the family is of some importance. Again, the position of the appendix is an important element in the vagaries of this disease. A retrocecal appendix produces different symptoms from the appendix hanging free from the lower end of the cecum. A long appendix running down over the ureter into the pelvis will manifest itself in bladder symptoms. In case the cecum has not descended, occasionally one will find an acute appendix up under the liver. This anomaly is most confusing. An acute appendix may occur in a right inguinal hernia sac. This has occurred several times in the author's experience. A number of years ago he operated upon an elderly man with a strangulated hernia on the left side. Upon opening the hernia sac he found the cecum with an appendix which was mildly acute. This was not a case of transposition of the abdominal organs. However, given a left-sided inflammation in the abdomen with symptoms pointing to the appendix, it is well to percuss the heart and liver to rule out a dextrocardia with transposition of the ab-

dominal viscera. The author has never encountered this condition with an acute appendix. He has suspected it many times when he had opened and found a left-sided appendix due to a mobile cecum or an appendix drawn over to the left by adhesions.

We find that the acute appendix, which is swollen, its peritoneum reddened, the middle layer infiltrated, and the mucosa injected, produces mild but typical symptoms. If not removed, the symptoms subside only to recur usually in a more marked degree. The markedly infiltrated appendix reddened, and often surrounded by omentum just as a mother wraps up a sick child in a blanket, is the type which is apt to rupture if not removed. The appendix which is gangrenous, covered with exudate in areas but not perforated, if properly handled with the least trauma possible and with every effort to limit the contact of its surface to the surrounding peritoneum, can be removed and the abdomen closed without drainage or at most a small strip of rubber tissue drainage down to the peritoneum. The ruptured appendix is apparent with its localized peritonitis or abscess formation. Finally, the ruptured appendix with spreading peritonitis requires the greatest of skill in the removal of the appendix and the care of the peritoneum. It is in this type of appendix that death is most likely to occur from a spreading peritonitis.

It is generally agreed that every diseased appendix ought to be removed. The fact must not be lost sight of that many cases of appendicitis recover without operation, even some that rupture with localized peritonitis with abscess formation with rupture of the abscess into the intestines.

In the past three years the author has had three patients referred to him diagnosed as acute abdomens that turned out to be angina due to coronary disease. Occasionally in patients suffering from pneumonia, especially children, a diagnosis of appendicitis is made. This should never occur. It is due to insufficient history and observation of clinical symptoms. The abdominal rigidity occurring in pneumonia is easily differentiated from the rigidity in appendicitis. The abdominal rigidity occurring in pneumonia is not a true rigidity. It recedes on deep expiration. The location of the tenderness is lacking.

Pyelitis, especially in children, is quite

frequently diagnosed as acute appendicitis and at times is operated upon for such. This should not occur. There is a higher temperature, the blood count is usually higher, and tenderness in the right kidney is present. More important is the finding of pus cells in a catheterized specimen of urine. It may seem trite to emphasize the microscopic examination of the urine. However, in the hurry of a so-called emergency operation this procedure is sometimes neglected. It is more important than the blood count. The thorough check-up on the urine will save an operation on a suspected appendix when the symptoms are atypical and due to the kidney or stone in the ureter. The following case will illustrate how a surgeon or a physician may be confused by the early symptoms of an acute appendicitis. A cystoscopic examination was made on a patient by the urologist on account of the bladder symptoms. The urologist found the right ureter and bladder injected and inflamed, but was not satisfied. Later an acute gangrenous appendix lying across the right ureter down to the bladder was removed. This case is cited to illustrate the vagaries encountered. A retroperitoneal acute appendix, high up in the kidney region, at times is extremely difficult to diagnose. There may be pus and blood in the urine, which certainly would point to the kidney. Fortunately, the urge for immediate operation is not so great. An x-ray will aid greatly in differentiation.

Probably no acute adult abdomen has in the past been more frequently diagnosed as acute appendicitis than perforated gastric and duodenal ulcer. Numerous signs, that we have in acute appendicitis, exist which lead to this error—right-sided rigidity, severe pain and dullness in lower right abdomen, high temperature, and blood count. There is no condition in abdominal surgery in which a more thorough history is needed. If the case is seen early and gives a clear history of ulcer, the differential diagnosis is quite simple. After a few hours with an indefinite history, it may become almost impossible to diagnose.

An appendix, when it has become entirely gangrenous and has not yet ruptured, may deceive the most expert. A college girl suffered a mild attack of an acute appendicitis. The following day her symptoms entirely disappeared except for a slight rigidity. She had a normal tempera-

ture, normal blood count, no tenderness, and from all appearance she was normal with the exception of the slightest rigidity. Upon opening the abdomen a gangrenous appendix was found. This is not rare. It shows how easily one can be deceived.

In the female a salpingitis, especially in young girls, will cause confusion. The history will usually disclose pain in the lower abdomen on either side more disseminated than in appendicitis. The blood count is liable to be higher. The smear for gonococci is of greatest value. Vaginal examination will usually decide this case. Yet it is not rare to see a salpingitis operated for an acute appendicitis.

The differentiation of an ectopic pregnancy from an acute appendix ought not to be difficult. Yet, occasionally this error occurs. The history of the menses, the shock, the tender cervix, the palor, the palpation of the abdomen ought to prevent this error in diagnosis. Finally, if in doubt, the Aschheim-Zondek test may aid in the diagnosis.

Acute cholecystitis at times is confused with appendicitis. The symptoms of an acute cholecystitis—the tenderness just below the free border of the 9th costal cartilage, percussion or palpation of the mass, pain radiating to the shoulder, tenderness about the 10th rib posteriorly, jaundice at times—with a good history make the differentiation usually easy.

An acute colitis located in the cecum may simulate an acute appendicitis. Examination of the stool, the more diffuse tender mass, blood count and temperature with the history ought to suffice to clear up the diagnosis. It is possible to have a fecolith ulcerate through the wall of the cecum and produce intestinal symptoms as in acute appendicitis. Two such cases came

into our service a number of years ago. A diverticulum may perforate and produce a local peritonitis with an abscess occurring on the right side. This may be extremely difficult to diagnose from appendicitis. A Meckel's diverticulum may rupture or the diverticulum may have a fetal remains in the form of a free cord at its tip which may become attached to some other organ in its region and produce an acute obstruction in the right lower abdomen.

Two drugs commonly used by physicians—morphine and cathartics—which should not be used when a diagnosis of appendicitis is suspected, are an important cause in masking the symptoms and delaying the operation. The use of morphine is absolutely contra-indicated until the diagnosis has been entirely cleared. The giving of a cathartic, so commonly done in intestinal conditions, can cause a great deal of damage and at times be an element in the death of the patient.

In this brief summary of some of the various diseased conditions which we encounter in the diagnosis of acute appendicitis, it is quite evident that the surgeon must not only be alert and consider all of the vagaries that may occur but also the possibility of the pathology of other organs. The acute appendix means an acute abdomen with more or less peritonitis. If possible, the source of the peritonitis must be found. Delay and procrastination often mean death. In the more obscure cases, in which every means have been utilized, the exploratory laparotomy in the hands of a trained surgeon must be used. In the hands of a poorly trained surgeon it is an extremely dangerous procedure. A human life may be at stake.

713 E. GENESEE STREET

## PENSIONS FOR PHYSICIANS

Amid all the plans, some of them fantastic, for old-age pensions, the physicians must look out for themselves, says Colorado Medicine, for no company automatically pensions us at a certain age or after so many years of service. No faithful doctor of medicine should ever be subjected to financial humiliation in his later years. Our Woman's Auxiliary is aware of the need of something to be done and has already taken tangible steps in that direction. However, the move should be on a scale far more vast.

We have noticed a few articles on this subject in our medical journals. They have shown a few pertinent facts. If 150,000 doctors paid \$1.00 per

month into a fund, it would amount to \$1,800,000 annually. It would provide, say \$100.00 a month to every physician past the age of 65 and half that sum to his widow for life if she survived him. In order to partake of the fund he would have to abstain from practice. This would take approximately 20,000 men from practice to begin with and perhaps 5,000 per year after that. There would be some resultant easing of the "starvation period" suffered by the younger men.

There is plenty to be said pro and con. It must be promulgated through our publications, discussed in our meetings, and criticized by great insurance companies and the A. M. A.

## Symposium on The Columbia County Department of Health

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### ORGANIZATION OF THE COLUMBIA COUNTY DEPARTMENT OF HEALTH

WILLIAM D. COLLINS, M.D.

*President, Columbia County Board of Health, Hudson*

The County Health Unit as it is to day in our county is due to a desire on the part of the Medical Society to place the administration of public health on a more modern and intensive basis. You are all agreed that the health officer of yesterday, even though compelled to be a licensed physician, had imposed upon him duties that were as foreign to his training as possible. In many instances these duties were more or less of a police nature. In some instances the tasks were more or less humiliating to the sensitive and highly educated physician. The health officer was compelled to placard the home of one ill of a communicable disease to fumigate at the termination of a quarantine, to investigate complaints of alleged nuisances which in most instances bore no relation whatever to the health of the community.

Early in this century began the campaign against tuberculosis. This was of an educational nature, and the local health officer was the liaison officer through whom the information was to be distributed. Then there followed the campaign against high infant mortality, and coupled with this were the efforts to improve the milk supply of the public. Soon the warfare against venereal disease was started, and with the advent of toxin antitoxin eradication of diphtheria became a part of the duties of the local health officer. Prenatal work then came into the scheme so that it soon became evident that the local health officer was burdened with tasks, none of which were light.

He was, of necessity, a part time official most inadequately compensated for the many and varied duties asked of him. Now the mere placarding of a home in which

there is a communicable disease, is not sufficient. An intensive epidemiological study of the case must be made, contacts sought, and missed cases found. The field became too large for any accomplishment if the old unit of town and village boards of health were continued, and so the only logical and workable unit was the county with a full time, well compensated Commissioner, and a staff large enough to give every section of the county equal service.

The medical profession has always participated in the actual performance of the work of preventive medicine, and so, because our Society realized how futile it was to hope for any success in this ever growing field of public health under the old regime, we petitioned our Board of Supervisors to create a County Department of Health. We felt that a centralization of all public health activities would work to the benefit of the public and the physician alike. We insisted however, upon one provision, and that was that it be kept strictly under local control. I, for one, believed that a properly functioning department of health would be the greatest check upon the entree of any form of socialized medicine, of which we hear so much to day.

It is a fact that it is necessary to provide services to the indigent, that they are unable to procure of their own accord, namely, diphtheria immunization, smallpox vaccination, chest examination and tuberculin skin testing in many instances, prenatal service, and care for the venereal diseases.

The providing of this indiscriminately, and without proper investigation as to the financial status of the individual, is indeed a wedge whereby state or socialized

medicine can gain a foothold, unless it is done under some plan which protects the physician and excludes those able to provide for themselves.

The scheme being worked out in our Department, and which will be explained to you to-day, will, I am sure, appeal to you as being of benefit to the indigent, and not in any way interfering with the practice of medicine. On the contrary, I feel that the physician is greatly benefited by our plan.

Prior to 1933, Columbia County spent for health work, including the maintenance of the tuberculosis sanatorium, a sum in excess of \$80,000 annually. Taking the year 1931 for example, the net maintenance cost of the sanatorium was \$62,000. The other health activities were at an expenditure of approximately \$20,000. We had at that time two county health nurses who were responsible to the Nursing Committee, appointed by the Board of Supervisors; one tuberculosis nurse working under the direction of the Superintendent of the sanatorium; one public health nurse in Chatham, employed by the village Board of Health; and one public health nurse in Hudson, directed by the health officer of this city. The salaries of these approximated \$9,000. Then, there were 23 town and village health officers, whose aggregate salaries amounted to \$6,000. Traveling and other expenses brought the total to \$20,000. There was no coordination in the efforts of these workers, though all were aiming for the same ultimate end. They were responsible to as many different boards and commissions as there were employees, and all were working independently of one another. In many instances, the duties of one overlapped those of another.

Under the new plan, however, there is a centralization of all activities with the work well coordinated, and the county thoroughly covered. When the Board of Supervisors formed the Department of Health for the county, and the city of Hudson agreed to participate, a new era in public health was inaugurated here. The Board consisted of seven members, three of whom were members of your Society, and all were enthusiastic for the work about to be undertaken. It was our effort to retain the good will of the medical fraternity of the county, as we knew that without the co-operation of these men, it would eventually fail.

The selection of a Commissioner became our first duty. We were desirous of selecting a local man, if one were available with the required qualifications, who would know the county and its problems, and work for greater harmony amongst all. Just here, I wish to express our gratitude to Dr. Godfrey of the State Department of Health for the invaluable assistance he gave us in having the Public Health Council accept the qualifications of our local candidate, Dr. Louis Van Hoesen, of Hudson. Immediately upon their acceptance of his qualifications, we appointed Dr. Van Hoesen as Commissioner of Health. The fears of some members of the County Society were immediately dispelled by this appointment, for it seemed to them that we would be dictated to in our selection.

Dr. Van Hoesen immediately began effecting a working organization. He appointed a part-time deputy; he took over all of the public health nurses working in the county, dividing the county into five districts and assigning a nurse to each district; a milk and sanitary inspector was appointed; and actual functioning of the project was soon under way. To the office secretary was assigned the duty of the vital statistics' compilation.

The tuberculosis work, including the sanatorium management, was a part of the activities of the newly created Department of Health.

Now, the health activities came under one head—the Commissioner—and he outlined a program that was satisfactory to the medical profession, and likewise to the lay people. The production and distribution of milk was put upon a modern and scientific basis; case finding in tuberculosis became a part of the nurses' duties; communicable diseases are investigated immediately, and the source of the case sought; venereal diseases treated in the indigent, and those financially able to provide such treatment themselves were directed to their own physicians. Immunizations against diphtheria and smallpox are done under a plan agreeable to the medical men; and prenatal care is given to those in need of such. All those benefiting by this work are investigated as to their economic status before any service is rendered.

Let us state the actual cost to the county. Taking the year 1931 as an example again, the county spent \$62,000 for the maintenance of the sanatorium, and \$20,000 for public health work in the various towns and



villages and one city, making a total of \$82,000. The appropriation asked for by the County Board of Health for the year 1933 was \$100,000. This included maintenance for the sanatorium. The organization of the Department and the purchase of the necessary equipment was in itself a capital expense, but at the end of the year a small balance was turned back to the County Treasurer. Disregarding the amount returned, and considering only the \$100,000, when you realize that state aid to the extent of 50 per cent, or \$50,000, was furnished, the actual cost to the taxpayer was \$50,000.

Again, to use 1931, we can show a saving to the taxpayers of a difference between the \$82,000 spent that year, and the \$50,000 in 1933—a saving of \$32,000 for a better and more intensive, and more thorough health service.

Unfortunately, time does not permit me to relate the several instances in which epidemics, particularly of scarlet fever, were abated by the prompt and thorough investigation by the Commissioner of Health in several of the townships and school districts of our county.

#### CONCLUSIONS

1. Since public health and preventive medicine is an integral part of the practice of medicine, and always has been, it is

our duty to take the initiative in all matters pertaining thereto.

2. Centralization of public health activities is the only efficient and economical method. In a county such as ours, the only logical unit is the county.

3. With state aid, a financial saving and a better service is given to the citizens.

4. The propagandists for socialized medicine, of whom there are many, are to my mind checkmated in a county in which a County Department of Health exists.

5. Participation in health work by the Medical Society as a whole and the physicians, individually, and harmony between them and the public health officials, is a requisite for success, both the physicians and the laity benefiting.

In conclusion, may I express the appreciation of our Board to the Third District Branch for giving us this opportunity of presenting our subject at such a gathering.

To the Columbia County Medical Society I extend to you the thanks of our Department of Health for the cooperation and interest which is making the venture a success.

May I also add our kindly feeling to the State Department of Health which at all times has been most willing and helpful in our problems.

360 WARREN STREET

## RELATION OF COLUMBIA COUNTY DEPARTMENT OF HEALTH TO THE PHYSICIAN

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*President of the Columbia County Medical Society, Chatham*

The relation of the county health unit to the physician is that of the relation to him of any public health organization. It would be impossible in the time allotted to this discussion to go into all the public health activities relating to the practice of medicine.

In this County, the question of the establishment of a County Health Unit was first brought before the County Medical Society some four or five years before its final inauguration. The Society was in favor of the County Unit, first because it felt that health service could be better carried out by full-time men adequately paid than by the old system of health officers spread

throughout the County and receiving such a small salary based on a per capita tax that they could not afford to give health work the necessary time and attention. Secondly, because better service could be had at practically half the cost of the old system.

However, it made stipulations that the personnel of the Unit be filled by County men if they could qualify; that the amount to be appropriated yearly for carrying on the work of the Unit should be under the control of the Board of Supervisors, and that the County Sanatorium should be placed under the control and management of the County Department of Health.

These stipulations were made, first, because the Medical Society felt that any of its members who wished to, and could, qualify would be amply able to carry on constructively the administration of the Unit. Secondly, because if the amount appropriated every year was under direct control of the County Board of Supervisors, it would be able to limit the amount so expended, and, thirdly, because the preventive measures, the control, and treatment of tuberculosis occupies such an important place in the health program it seemed necessary that the sanatorium be made a fixed part of the Unit. These facts are mentioned only to bring to attention the interest in, and the attitude of, the Medical Society toward the creation of the County Unit. This County Medical Society has practically underwritten this County Unit.

In discussing the relation of this Health Unit or any public health organization to the physician, there are three important factors to be considered. First, the plan and scope of public health administration; second, the public; and, third, organized medicine as it exists to-day in the Medical Societies.

The previous paper has given you a very clear picture of the vast field of medicine covered by a Department of Health—the control and prevention of certain communicable diseases, the control, prevention, and treatment of certain infectious diseases, the care of the child and mother, prenatally, natively, and postnatally, the practice of orthopedic surgery, the prevention of tuberculosis, and because of its special nature, special institutions for its control and treatment.

The vehicle for the administration of all these branches or divisions is the Public Health Clinic, supervised by the Department and ministered to by that most important of all the contacts between the public and the Department of Health, the public health nurse.

The second factor is the public. For the purposes of this paper, the public is classified in four groups: First, the indigent; second, those who can afford to pay for their medical service; third, groups interested in health insurance; and, fourth, individuals, groups, and foundations whose purpose it is to furnish free medical service to the public.

The poor we have always with us. They

are perhaps most subject to the ills that befall the human race and they must be cared for for their own welfare and that of society at large. Public health in its present aspect has been practiced for so long a period that not only the laity but the medical profession itself has become accustomed to taking an erroneous viewpoint in regard to furnishing medical service. It seems that a sensible way to look at this question is the way in which the furnishing of any other of the many human necessities would be looked upon. When food, clothing, houses, light, heat, and legal services are given to the poor, the State does not go into the business of raising or producing foods, or mining coal, or manufacturing clothing and building material. These commodities are bought at the market price, or nearly at the market price, depending of course on the amount purchased, from those concerns which are already in the field producing these articles. Why would it not be consistent to feel that medical service should be purchased for this purpose, not from organizations which have sprung up over night, but from that profession which for generations has specialized in the treatment of disease and has spent many years and large sums of money in preparation for its life work? Regarding legal services, no one ever dreamed of setting up a county legal department for the sole purpose of dispensing legal service to the poor. The legal profession has been too well and too intelligently represented in our legislatures to allow any such laws to come into existence. If the prisoner at the bar is unable to provide counsel for himself, the court appoints an attorney to represent him at a substantial fee. You will wish to call my attention to the judges and attorneys attached to the different courts, county, state, and federal, receiving salaries from public funds. I look on these as administrative officials and in the same class as the properly placed officials of a department of health.

Please understand that I do not cite the legal profession to criticize it in any manner. I commend it for its years of activity in protecting its rights and prerogatives. I would suggest the same type of clear thinking on the part of the medical profession. It does not seem to me to be a very difficult problem to work out a plan by which organized medicine will furnish

public medical care and at a fair and reasonable fee.

It should be stated here that the medical members of this Board of Health have taken great pains to see to it that the field of medicine has not been unnecessarily trespassed on, and they are ready to go further as rapidly as the profession at large is willing to assume the responsibility for the rendering of health service.

The second division comprises those who can afford to pay for their medical service. Democracy makes a clear distinction in leaving to private management all business subject to the law of competition. It would not seem to be a sound business principle for organized public health, financed by public funds, to furnish free medical care to those who can afford to pay for it, competing with the medical profession and making serious inroads on its income.

Only a casual survey of almost any public health clinic will demonstrate to what a large extent we have encouraged those able to pay to take advantage of this free service and have perhaps unwittingly so undermined their pride and sense of good citizenship that we have in reality pauperized them. This situation emphasizes how far we have strayed from those old-fashioned American ideals and traditions which were so potent in making our country what it is to-day. Let us encourage an early return to them. Those who can pay should pay for their medical service just as they pay for other services.

Groups and governmental agencies interested in health or sickness insurance. Is there really anything definite in the public mind in regard to launching the scheme of sickness insurance? In the latter part of July, President Franklin D. Roosevelt, in a radio address, indicated his interest in so-called economy security, and shortly afterward appointed a committee under that name and of which the Secretary of Labor, Frances Perkins, was made Chairman. On August 13, Miss Perkins, enlarging on the views of the President, stated in substance, that while some provisions are made for medical and hospital care for indigents, they do not begin to meet the needs of the situation and therefore the Committee of Economic Security was developed to work out a plan to solve the difficulties.

In another article, published August 19,

Harry L. Hopkins, Administrator of the FERA, discussing unemployment insurance, says: "In this bailiwick of public welfare lies also another aid to secured life—health insurance with medical care. All these things can be achieved with only minor disturbance to the present pattern. With private hospitals financially distressed, doctors on relief, sick people foregoing care, and a national crop of tuberculosis and rickets sown and ready for harvest a few years hence, people are beginning to realize that the problems of health coexist with economic disruption. So this becomes a logical objective for any commission charged with public welfare."

During the special session of our legislature, Governor Lehman expressed much interest in some form of health insurance. So the effort to institute some such form of insurance is well under way without the slightest suggestion that the medical profession is to be consulted as to how the medical care will be furnished. Financed and fed by the laity, the nature, scope, and method of medical treatment ordered by lay groups, with the same authority, presenting and discharging patients, is far too foreign to the medical viewpoint to ever be tolerated by the profession. When these measures are finally mapped out, the medical profession should have at least one foot under the conference table.

As for groups and foundations, their place in the health program is second to none. Vested with vast sums of money to carry on experimentation and research on a large scale, the fruits of their efforts have placed in the hands of the medical man the most valuable ammunition for the cure and prevention of disease. They are the munition plants. In time of war the munition worker does not use his product himself. It is passed on to the man on the front line, and in this war on disease and its prevention, the front-line man is the practicing physician. Then, and hardly less important to the vigorous campaign for better health than is the research work, comes that of public health education. He who has had much to do with health work must admit the general ignorance of the public in regard to health matters, and even these large foundations with their ample financial backing and excellent personnel would be taxed to the utmost to carry out anything amounting to a comprehensive program of health education. Theirs to

make the ammunition; ours to fire it. Theirs to educate the public; ours to meet the inspired demand.

We now come to the last and most important factor in the relation of public health to the physician—the Medical Society. The Society is our organized body. On its vigorous activity we must depend to retain such privileges as we enjoy to-day and the hope of entering a wider field in the future. The success we have will in turn depend on the unselfish sympathy and support of each member. The individual physician's attitude toward his society and in regard to health matters is of vital importance.

For generations, the practice of medicine has consisted in the treatment of disease with little or no attention given to the maintenance of health. By this type of practice the physician made his livelihood and it evidently never occurred to him that the practice of measures to maintain and better public health were more dramatic and sensational and equally remunerative.

He, however, was not alone to blame for this custom. The medical schools have always stressed the study and treatment of disease and have nothing or very little in the curriculum in regard to health service. Both these forces, the physician and the school, have educated the public in the belief that the physician's services were to be sought only in case of illness and not for guidance to health.

What measures can be taken to return to the physician a field that he never should have allowed to slip from his control? Several plans are already being carried out in the counties and cities of different states. They strive among other things to

make every physician's office the center from which public health knowledge and preventive treatment can be had and paid for in part from public funds. These plans admit, and I am sure you will agree, the necessity of public health administration but they go a step further and state that the active entrance of the physician into health work should not in any way curtail appropriations for carrying on its work. I disagree with this idea. If the physician enters actively into public health work it should be possible to cut down considerably the personnel of the department, and if he is paid in part from public funds, the appropriation to the department should be reduced to such an extent that the public will not pay twice for the same service. Eventually, the functions of a department of health would be administrative, and the exercise of such police powers compulsory to the protection of society.

What can be done in regard to the adequate provision of health service to permanently establish the medical man in the confidence of the public? A closer organization, a willingness by conference and study to qualify for health administration, an earnest appreciation of his responsibility, not alone to his own private practice, but to the public at large in regard to health matters? This would seem to be nothing more than his honest duty.

Schooled in the etiology of disease, no other group in society is so qualified to render measures for its prevention and treatment.

Versed in the functions of the normal body, who can better teach the lessons of health. The responsibility is ours. We should assume it.

## A MODIFICATION OF THE DETROIT PLAN IN ADMINISTERING PUBLIC HEALTH

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In presenting a brief description of the plan which is now being applied in Columbia County in securing the participation of the profession in public health activities, we have no phenomenal discovery to describe. But rather, we hope to inspire increased interest in the field of preventive medicine and wish to develop a

system which will work efficiently for the promotion of public health and at the same time return a satisfactory income to participating physicians.

Reviewing the methods of introducing and applying the new measures of preventive medicine as they have developed in the past, we must agree that all the procedures

pertaining to disease prevention and control have been at all times available to every physician; and also, that early general adoption and application of these methods would have forestalled any need for free clinics.

Since the public must be instructed concerning the value and need of many preventive measures and physicians were not in a position to appear as instructors urging the people to come for such services without appearing in a false light as soliciting work, it became necessary to organize so-called "educational clinics." These institutions were able to demonstrate to both physicians and the public the invaluable results obtainable through carrying on this work. That smallpox vaccination, diphtheria immunization, child-health supervision, and prenatal care are well-recognized procedures, available to every physician, and possessing such value as to demand systematic application, we are all aware.

That these measures have not been generally applied, is a regrettable fact; and that the medical profession has thus failed to develop a source of income is partly chargeable to their own oversight.

One great advantage of a unified health department lies in its opportunities to organize and systematize these functions of preventive medicine.

The Detroit plan is announced as a method of securing participation in public health work by the profession. It actually substitutes the private physician for the health staff worker and socializes preventive medicine by providing a nominal fee schedule which is lower than a reasonable rate, and paid from the tax budget; also encouraging all who so desire to receive treatments at public expense. Somewhat over 80 per cent of Detroit physicians have agreed to work under this plan. What happens to the fee schedule of the other 20 per cent can be imagined. And how soon will be adopted the tendency to place curative medicine upon the same system of reduced fees at public expense, only a socialized people can determine. Vaccinations and toxoid treatments at 50 cents, if paid from public funds, or one dollar if the patient chooses to pay, must be compared with the return obtainable where all pay regular fees if able and the health department provides service for the very poor or those on relief.

In the clientele of each physician, there are many families who still retain their

individual independence and self-respect by continuing to pay their family physician his regular fee; and placing these people into a system of socialized medicine by any act of ours would be a foolish policy. There are also numbers of people who are at present supported by relief funds and while a staff of health workers are available, no doubt a considerable portion of these persons should receive preventive treatments at free clinics from economic considerations.

Separation of individual families into two groups—those independent Americans who choose to select their own doctor and pay him; and those from the socialized beneficiaries who never did pay and never will—is a fundamental idea of our plan. This separation can best be performed by the doctors, whose past experiences furnish the required information.

The plan adopted in Columbia County was first submitted in outline to the Columbia County Medical Society in May, 1934, where it was favorably received.

It was then developed through the following steps:

1. Census of all preschool children in county.
2. Checking census with completed records of immunizations and death records.
3. Lists mailed to each physician requesting him to select any to be referred for free service, and also asking reports of completed work, so that the efficiency of this system could be determined.

The result of this census and canvas indicates that the physicians of Columbia County and vicinity prefer to remain responsible for immunizing, vaccinating, and supervising the health of 37 per cent of all preschool children thus leaving 63 per cent who must depend upon free service rendered by the staff of our health department.

Reports of financial returns to the men who have thus far supplied such information indicate that regular fees have been obtained for nearly all immunizations and vaccinations performed by private physicians; that our efforts to create activity in this work by sending out lists and notices have resulted in many paid immunizations by local physicians in families who would otherwise have neglected to secure treatment; and that our continued efforts to establish annual health examinations, child

health supervision, etc., must permanently increase the income of the medical profession, where willing participation is obtained.

In addition to the previously named procedures in which we solicit the aid of the medical profession, there remain several other functions which have been developed more or less by health workers.

Of these, the annual health examination, we believe, should be delegated entirely to private physicians, and these examinations should be urged upon every family with the purpose of securing diagnoses and treatment for cancer, Bright's disease, diabetes, anemias, etc., while still in the early stages. Our nursing staff is instructed to urge this service.

On the other hand, any case-finding program in tuberculosis, where large numbers are given skin tests, as in high school groups, can obviously be done much more conveniently where such groups are assembled; and the follow-up with x-ray and physical examinations can best be done by a specialist in the work.

The findings of these campaigns are referred to the physician, and his participation and support invited in carrying out treatment if needed.

Venereal disease clinics are held and attended chiefly by patients who have been referred by physicians. An improvement in this work is still obtainable through physicians reporting to the department the names of any persons who have discontinued treatment while under the physician's care. In these cases action will be taken to compel return to doctors' care.

Examinations of food handlers, which were included in the Detroit Plan for participation or substitution in health activities, have not been included in our system for the following reasons:

1. The laboratory and the microscope, rather than the stethoscope provide the facts needed.

2. The private physician could ill afford to accept a fee for reporting a condition which would disqualify a food-handling patient for this job.

We believe all needed examinations for food handlers should be made by a health department official.

The medical profession has expressed rather strongly its disapproval of free clinics. Where these clinics can be con-

fined to immunizations, and preventive and diagnostic work among groups selected by physicians and referred for specific forms of examination or treatment, the objections to free clinics seem to be removed.

We believe the profession should endorse this work under these conditions, thus displaying a real interest in securing such services for those who are unable to provide for themselves.

Furthermore, we believe that such an attitude will justify an organized opposition to the introduction of any health insurance system.

If health insurance really insured health, the medical profession could give it consideration; but we know too well that governmental control means political control, and the less of it we tolerate in the practice of medicine, the better will be the health of the population.

Furthermore, we believe that a majority of the general public would still prefer to purchase their own medical services and deal directly with their own doctor, rather than be assessed or taxed to support a system under which they would be treated by politically appointed physicians, subject to such codes or rules as the dictators in power might establish.

### CONCLUSIONS

Summarizing the details of the system which is in operation in Columbia County, there seems to be evidence to sustain the following conclusions:

1. The tendency to encourage socialized medicine is avoided.

2. The private physician is supplying preventive treatment for a large group of individuals who would never attend free clinics.

3. The medical profession better understands that the purposes of a health department are to get real results and to avoid intruding into the field of private practice.

4. Financial returns and established fee schedules, both for the present and, still more important, for the future of medical practice, are satisfactorily retained.

5. The cost of providing the considerable amount of free service is economically provided, without introducing political or bureaucratic factors into the practice of medicine.

## HIGH- AND LOW-POWER ROENTGENOGRAPHIC DIFFERENTIATION BETWEEN DIVERTICULITIS AND CANCER OF THE SIGMOID

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Contrary to a rather general belief, the roentgenographic differentiation between diverticulitis and cancer of the sigmoid is difficult and exacting to make. A lesion of the colon, especially the sigmoid, is probably missed more often than any other in the gastro-intestinal tract.

When a patient is referred to the roentgenologist for an examination of the colon, especially if there is any question concerning the sigmoid, it is important to obtain as much clinical information as possible. Particularly is this necessary when the question arises as to whether we are dealing with a benign or malignant lesion. We have to consider the age and type of the individual, the character of the attacks and whether there has been intestinal obstruction or not, how much pain and fever the patient has during the attack and just what the blood picture is during the febrile period. Has the patient had bloody stools with mucus or frank rectal hemorrhage? What has been the character of his constipation, if any, and has he ever had "explosive" stools. Have the attacks been accompanied by shock and evidence of an acute abdomen and is a tumor present which entirely disappears between the attacks? Has there been any indication of bladder irritation?

The authors have endeavored to answer these queries by tabulating the clinical picture of cancer as compared with diverticulitis of the sigmoid.

One occasionally finds malignant degeneration in a diverticulitis, but the characteristic picture of either, roentgenographic and clinical, then becomes obscure. Anemia out of proportion to the rest of the clinical picture may be found in cancer of the ascending colon but is generally slight in malignant involvement of the distal colon. The first attack of a sigmoid lesion is usually more puzzling to decide clinically than after a long duration of symptoms.

*Proctosigmoidoscopy* should always be made before the case reaches the roent-

genologist, as barium particles often interfere with clear visualization of the mucosal surface. Unfortunately this type of direct examination is often of no aid due to inability to insert the tube up far enough on account of redundancy. When positive observations are possible, the x-ray can outline the extent of the lesion and define the upper borders.

Having obtained as much clinical aid as possible, one may proceed with the preparation of the patient for the roentgenographic examination. The colon must be empty before giving the barium clysmas and this is usually accomplished by giving two ounces of castor oil the night before the examination, followed by a thorough cleansing enema in the morning to be repeated until the return flow is clear. The patient may have a light breakfast and then reports to the roentgenologist for examination. He is placed in supine position on a fluoroscopic table and the procedure is explained to him in order to obtain his confidence. The success or failure of the entire examination may depend on how completely he will be able to cooperate in his ability to suspend respiration while the roentgenograms are taken.

There are certain technical factors of importance in the roentgenographic examination of the colon which might be mentioned at this time.

It is advantageous to have an apparatus which is capable of switching from a fluoroscopic setting to radiography instantly as during fluoroscopy one often observes something which is necessary to record on a film. The filling of the colon is often more complete during administration of the clysmas than after turning the patient prone. Fluoroscopy aids one in best positioning the patient so that redundancy is eliminated.

A few words about the fluoroscopic setting may not be amiss. One so often hears a warning not to exceed a certain setting for fluoroscopic use for fear that the patient or operator will receive a "burn."

The opposite is also a possibility—that not enough current will be used to properly visualize the organ being examined and pathological involvement will be overlooked. The fluoroscopic screen may be old and the image not clear or the eyes may not be thoroughly accommodated. The difference when the roentgenologist is properly prepared will be amazing and the added detail obtainable most gratifying. If the films obtained consistently reveal lesions not readily discernible fluoroscopically, it behooves the roentgenologist to locate the trouble in his fluoroscopic technic or apparatus.

X-ray examination of the sigmoid area presents certain inherent difficulties which if not recognized and a technic evolved to cope with them may interfere with satisfactory visualization. The lower colon is commonly freely movable, redundant, and often coils upon itself. It is situated deeply and surrounded by the pelvic walls so that it is almost impossible to directly palpate it. These difficulties can be eliminated largely by administering about one pint of the barium solution, then stopping and thoroughly fluoroscoping the patient in *all possible angles, especially obliquely* so that the entire sigmoid area may be closely examined. At one certain best oblique angle the sigmoid is elongated and clearly visible throughout and the redundant, overlapping bowel shadows are eliminated. It is really remarkable how clearly the entire pelvic colon may be shown in this manner. Since only a pint of the clysma is given, it is not sufficient to fill the upper colon, cecum, and terminal ileum and cause overlapping shadows from this part of the proximal bowel. After the lower colon has been thoroughly examined and roentgenograms made, the entire large intestine is filled to full capacity and the usual stereoroentgenograms made. The patient is further examined after partial and complete defecation.

One matter of considerable importance had better be gone into at this moment. There is one lesion of the colon frequently shown as soon as the colon is visualized. We are referring to diverticulosis. This is often a chance finding of little clinical significance. But there is another kind of case in which it is of utmost importance to know whether diverticulitis is the cause

of the patient's complaints or whether it is a more serious disease. We are now thinking of the obviously very sick individual with some degree of obstruction, fever, and a palpable mass; the barium clysma often shows complete obstruction of the colon in the sigmoid area. Clinically the case may be suspected to be a cancer, and in fact this is often the roentgenologist's suspicion. Should this case be reexamined the following day, it is often one's good fortune to find several diverticuli outlined, and a diagnosis of a benign diverticulitis can be made. If there is too much haste, these cases are sometimes operated upon under the erroneous impression that the completely obstructive lesion of the sigmoid is cancer whereas at operation the tumor is found to be inflammatory; the roentgenologist may save an operative procedure if he counsels waiting for a day to permit reexamination and give the inflamed sacs an opportunity to fill with barium.

Mistakes in roentgenological interpretation often result from trying to do too much; taking care of too many cases in a given time; being too hasty where more time was necessary; as well as in lack of judgment. All of these factors make a correct diagnosis in disease of the colon a difficult matter unless sufficient time can be devoted to the thorough study of the case, just as one knows it must be done when the stomach and gallbladder are examined.

One of the greatest aids in the diagnosis of the lesion has been the minute study and analyzing of the finer details of the roentgenographic appearance. Our method which we now advocate is one suggested by Dr. L. G. Cole in his paper on "Malignancy of the Small Intestines," which was read before the American Congress of Radiology in Chicago in 1933. This method consists in magnifying the image of the involved part of the colon so that all of the finer shadows are brought out in great detail. This magnification of the image we have designated as a "high-power" roentgenogram while those films taken under ordinary technic and which are used for comparison are called "low-power."

These finer details of pathological structures are brought out in a striking manner by roentgenograms of the sigmoid taken with the patient turned obliquely. The



best delineation is obtained when *compression* is possible over the lesion at the time of the exposure of the roentgenogram.

An effort was made to analyze the roentgenographic characteristics of the filling defect in diverticulitis and cancer. Table I summarizes our observation.

The earliest manifestation of diverticulitis roentgenographically is a peculiar, serrated edge to the lumen of the sigmoid. This may vary from a slight saw-tooth, irregular, slightly fuzzy margin to a picket-

clinical appearance in certain stages, which, however, more often is less acute. The duration of the illness may be less than with a benign lesion. Bloody stools are more common and the change in the bowel habits is likely to be more pronounced. There may be expulsive stools or a history of recurring attacks of diarrhea with alternating constipation.

The roentgenographic appearance in cancer is likely to be more definite and decisive. One looks for *canalization*, a

TABLE I.—CLINICAL SIGNS

Cancer of the Sigmoid	Diverticulitis
(1) A disease of advanced years, although it may occur at any age. Apparently attacks all types of individuals. Frequently accompanied by loss of weight.	(1) Most common over the age of 40. Occurs most frequently in obese patients. Seldom loss of weight.
(2) History of a progressive lesion without remission. May have no symptoms until obstruction occurs.	(2) History of recurring attacks over a period of years.
(3) Patient may have but slight or no pain, no fever, and blood count very little effected.	(3) Pain, fever, and blood count indicate acute lesions.
(4) Frequent bloody stools with mucus. Frank rectal hemorrhage at times.	(4) Seldom hemorrhage—occasionally blood streaked mucus, rarely frank hemorrhage.
(5) Increasing constipation with expulsive stool from obstructive lesion.	(5) Constipation recurring with no specially expulsive stools.
(6) Seldom ruptures into the perisigmoidal structures. Only causes "acute abdomen" when producing intestinal obstruction.	(6) Often appears as an "acute abdomen" with considerable shock, whether there is a rupture or not.
(7) Tumor never entirely disappears, although it often diminishes in size.	(7) Disappearance of the tumor.
(8) No special bladder symptoms.	(8) Bladder frequently involved with irritative symptoms.

fence, characteristic appearance. No diverticuli may be demonstrable as separate, isolated sacs, but by the above described characteristics one knows that the condition is present nevertheless. The diverticulitis may be limited to the wall of the colon, the sacs being altogether confined within the layers; there may even be tumefaction and a palpable, sausage-like tumor easily palpable. Such a patient may present an alarming clinical appearance with considerable fever, profuse perspiration, extreme pain and a history of bowel difficulty and increasing constipation, with pain on defecation. The patient demands quick relief and the surgeon may be momentarily confused and uncertain whether he is dealing with an "acute abdomen" or not. Too often his one thought is that it must be a cancer. If the roentgenologist can be positive of his findings and correctly interpret the obstructive lesion, medical treatment may effect the cure. These lesions respond readily to light doses of x-ray therapy.

The cancer patient may present a similar

*spool-like deformity* of filling, a sharp cut-off between the normal bowel and the diseased portion, with narrowing in the diseased area, the margins of the region being "*fingerprinted*," and the mucosal pattern destroyed. The lesion is *permanent* on all films, does not shift positions and is the same on repeated examinations. The bowel may be dilated abnormally on both sides of the lesion. The involved area is fixed in position as though cemented fast, and a palpable tumor may be felt; the area is usually tender. The *location* of the lesion is important in the differentiation. If the defect appears proximal to the free sigmoidal loop, the chances are that it is malignant. Diverticulitis has a tendency to limit itself to the sigmoid, seldom involving the lower portion of the descending.

In studying roentgenographically the differential distinctions between diverticulitis and cancer, it is helpful to tabulate the more important roentgenographic findings. By careful deduction and comparison we may then be able to arrive at a satisfactory

pathological classification. We have found Table II useful.

In some cases no matter how much care is used, there will be a redoubling of the shadows and the lesion will be covered up. In one patient we were able to demonstrate the cancer by filling the bladder with

looked or filling defects caused by intestinal contents excluded. It is a frequent occurrence to find a renal or gallbladder lesion which accounts for the entire clinical picture when the patient is referred for an x-ray examination of the colon. It is well, also, to become accustomed to a variance

TABLE II.—ROENTGENOGRAPHIC SIGNS

*Cancer of the Sigmoid*

- (1) Canalization always present in certain types.
- (2) Mucosal pattern destroyed.
- (3) Filling defects show as lobulated cauliflower masses with irregular ragged lumen and showing finger print deformity.
- (4) There are two special types, the napkin ring deformity with minimum involvement and the massive deformity with crater formation.
- (5) Usually a sharp sudden demarcation between the normal and pathological involvement.
- (6) Haustral markings destroyed.
- (7) Persistent unilateral deformity in some types.
- (8) No evidence of diverticuli.
- (9) Constancy to the character of the deformity.
- (10) Rigidity with fixation and a frozen mass.
- (11) No masses of barium seen outside the lumen of the gut.
- (12) Usually intraluminal unless accompanied by perisigmoidal inflammatory mass.
- (13) The sigmoid is liable to maintain its patency through canalization and fixation. The proximal colon is dilated. Sudden obstruction may occur.
- (14) Spasm of the colon is less frequently seen in malignancy.

*Diverticulitis*

- (1) Not present.
- (2) Mucosal pattern still incompletely seen.
- (3) Filling defect consists of a serrated irregular "picket fence" appearance.
- (4) Massive involvement. No crater formation. Never napkin ring deformity.
- (5) No distinct demarcation between normal and pathological involvement.
- (6) Haustral markings still in evidence. Points at depth of indentations widened.
- (7) No unilateral deformity in any type.
- (8) Bud-like shadows present indicating diverticuli.
- (9) Changing character to the defects.
- (10) Maintenance of flexibility.
- (11) Masses of barium may be seen outside the outline of the colon from ruptured diverticuli.
- (12) Extraluminal. The lesion is always in the wall or in the perisigmoid structures.
- (13) Intestinal obstruction from inflammatory swelling and edema frequently occurs. Dilation of the proximal colon not so extensive.
- (14) Spasm of the colon is more likely to occur in inflammatory lesions on account of irritability.

water after the colon has been distended with the barium clysmas. The raising of the sigmoid by the distended bladder brought the lesion into view.

Fisher's method of insufflating the colon with air after the barium has been passed out is a valuable adjunct. Its special value is in polypoid degeneration of the mucous membrane of the colon or any growth which protrudes into the lumen of the gut.

Finally in addition to the above causes for misinterpretation we must not neglect to make a preliminary film before the colon is filled with the barium clysmas, so that extracolonic shadows may not be over-

looked or filling defects caused by intestinal contents excluded. The visualization of the lesion may even disappear after defecation due to sinking of the colon into the pelvis. The reverse of this may also occur, the lesion being most distinctly shown in the roentgenograms made after defecation.

We firmly believe that if the technic as suggested in this communication be carried out with infinite care, proper recognition of the lesion will be possible in the great majority of cases.

## A STUDY OF 671 CASES OF PEPTIC ULCER WITH SPECIAL EMPHASIS ON 114 POSTOPERATED CASES

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During the past six years we have observed 671 cases of peptic ulcer in the Gastro-Enterological Clinic of the Fourth Medical and Surgical Divisions at Bellevue Hospital. These patients have made a total of 11,656 visits, which gives each patient an average of 17 appearances. Of the 671 cases, 507 were unoperated when they came to us for treatment, thus leaving 164 which had previously been subjected to surgical procedure. Our treatment has tended to be conservative and we have submitted each case to a strict medical regime, with frequent examinations before we considered surgery. As a result, we have found it necessary to operate on but 46 of the 507 unoperated cases, or less than 10 per cent, during this period of observation.

These cases have been exposed to the major mishaps that may occur in the course of ulcer treatment, namely, perforation, hemorrhage, and cancerous degeneration. Perforation was found to be a real danger and occurred even after prolonged medical care in patients who were apparently progressing satisfactorily. We were unable to prognosticate this accident by means of prodromal symptoms or x rays which were taken frequently in our clinic. It occurred in 15 cases, or approximately 3 per cent of those we had under observation.

Hemorrhage is always an alarming complication of peptic ulcer. By hemorrhage we refer to the massive type which results in hematemesis or melena of such severity as to incapacitate the patient and necessitate hospitalization due to the presence of shock or secondary anemia. Gastric hemorrhages have at times proved fatal in spite of every effort at supportive measures. Massive hemorrhage is little understood except by those that have had an oppor-

tunity to observe a large group of cases. Therefore, for a more intelligent understanding of the best measures to be employed in the treatment of these cases, one of us<sup>1</sup> was led to make a study of the cases admitted to the hospital for the past twenty-three years. The advisability of dividing them into the following five groups was shown by this study: (1) hemorrhage occurring in patients with a peptic ulcer under competent medical management, (2) hemorrhage in cases, operated on for acute perforation or chronic ulcer, that had never had the catastrophe of hemorrhage until months or years following the operation, (3) hemorrhage occurring in ulcers that had previously been operated on for a hemorrhage and with the patient continuing to have recurring hemorrhages postoperatively, (4) severe hemorrhages that occurred in patients with negative or very short gastric histories and the patient never knowing he had an ulcer until the hemorrhage occurred, (5) patient admitted with hemorrhages and a long history of ulcer symptomatology, but without regulated medical treatment.

The application of this classification in our clinic has been found most helpful. We have been enabled by means of careful histories and observations of the clinical course to place patients in a definite group which has led to a more enlightened management of the complication and to the use of surgical intervention when advisable.

It is in the first group that operation obviously is desirable, for here we have exhausted conservative medical measures. This operation should be delayed until the patient has completely recovered from the acute hemorrhage and has been properly prepared. It is well to remember, how-

ever, that recurrences are prone to occur.

The patients in the fifth group must not be confused with those in the first, for here, although the fifth group give a long history of ulcer symptoms, they have never received adequate medical therapy, and our results show that improvement is obtained quickly in most cases. If they fail to respond, they automatically transfer themselves into the first group and must be treated as such.

Patients in the second and third groups present a most difficult problem. They have previously been subjected to various surgical procedures, often resections. Any new operation must necessarily be only a speculation without very great hopes for success. The only definite indication for operation here is the presence of a bleeding marginal ulcer. Certainly, conservatism combined with a well-regulated, medical régime produces sufficiently encouraging results to offer the most hope.

Hemorrhage as a complication is said to be increasing in the past few years, although with lessened severity. Fifteen cases were observed by us during the six years in our clinic.

The possibility of carcinomatous transformation of a gastric ulcer, a question that has aroused numerous and varied opinions, has not alarmed us and we have treated all cases of gastric ulcer by conservative measures unless the pain was uncontrollable, and then they were referred for operation. We have taken this attitude because no unequivocally proved case of carcinomatous degeneration has ever occurred while under our management. There have been several cases which, at first, were thought to be malignant, but at operation were proved only large indurated ulcers. The following is a typical case:

Male; Polish; tailor; age 48 years; admitted to hospital November 11, 1933. History covered eleven years of symptoms from ulcer. Pain in epigastrium two or three hours after eating was the chief complaint, but was associated with nausea and insomnia. This pain radiated to the left costal margin or directly backward. He had been under medical management in our clinic. There had been a considerable loss of weight prior to admission. A physical examination showed slight tenderness and rigidity over the epigastrium and at the left costal margin. X-ray examination had proved the presence of a gastric ulcer and one taken at admission led to the diagnosis of carcinoma of the stomach. This diagnosis was followed by an exploration. At operation the findings were "a large mass the size of a small orange was felt at the midpoint

of the lesser curvature protruding into the stomach." This was suggestive of a malignancy. A gastro-enterostomy was performed as a preliminary to a resection because the condition of the patient was such he was not considered as a suitable risk for radical surgery at the time. At the second stage, six weeks later, the operator was amazed to find "the extensive reaction noted in the previous operation had largely subsided." Pathological study of the resected stomach showed the ulcer practically healed and no malignancy.

Many of these patients presented themselves to us after periods of medical régime, surgery, or both, with a high percentage of cases failing to get relief from symptoms after each type of treatment. It has not been our purpose to establish dogmatic rules for their treatment, but to emphasize that both medical and surgical methods have their place in different stages of the disease.

In an attempt to determine the type of patient who needs to be operated upon, and the correct time to perform the operation, we have considered as possible determining factors the question of severe pain, obstruction, and hemorrhage. This study led to the use of a long, strict, and varied medical régime on each case regardless of presenting symptoms and x-ray findings. The result has been the belief that ulcers cause very few organic obstructions, and that medication of an antispasmodic nature will, in a majority of cases, suffice to relieve the condition. The cases of moderate hemorrhage as indicated by anemia and tarry stools were treated as ambulatory except those that became sufficiently severe to indicate damage to a large vessel when they were hospitalized to await further developments.

The real indication for operation has been found by us to be severe pain unrelieved by medication or diet. This must be a pain unrelieved by medication or diet. This must be a pain without intervals of relief or periods of remission which is probably caused by the penetration of the ulcer into the pancreas.

It is our belief that pain forms the most important and frequent indication for surgical intervention, and that its cause is probably pancreatic in origin. The desire for a laboratory test to determine the involvement of the pancreatic substance, as shown by changes of pancreatic secretion, led us to carry out the amylose test of Elman<sup>2</sup> in an attempt to find a means of determining the time for operation. It was

found, however, that the results were not uniform and that examination of the blood taken from dogs with ligated pancreatic ducts failed to show the increases or decreases as expected. A fairly large number of our cases were then selected, some of which were known to have pancreatic damage. In this group our results also failed to show any regularity and uniformity, and we discarded the test as a diagnostic aid.

Since it is always advantageous to evaluate the end results obtained in this type of work, we have selected from the total series our 114 postoperated cases and will place special emphasis on these. We will not include in this discussion 81 cases of perforated ulcer, but will confine ourselves to the postoperated cases of chronic peptic ulcers.

The 114 operations occurred in 103 patients, who visited the clinic 2,224 times for an average period of two years and two months following their operations. This gave us the opportunity of observing them approximately ten times a year over that period. By means of this complete follow-up we are in a position to make valuable deductions, that would otherwise not have been possible by card or letter replies, which we have proved to our own satisfaction are entirely untrustworthy and misleading, as they so often reach the patients in periods of remission and his answer is only for the present. This applies likewise to personal interviews where the patient returns at a given time for an interview and examination.

It is also our belief that this series will prove of considerable value because of the large number of factors we have attempted to determine, so that a type or group could be established in which peptic ulcers are most likely to occur. The following tables and percentages are all taken from the postoperative group.

Inasmuch as men and women of different nationalities are represented, a cross section is offered of the average ulcer individual in his physical conflict. The analysis comprises totals, averages and percentage from 92 males and 9 females, a ratio of ten to one, which bears out the already established conception of prevalence in the male.

Table I presents totals and percentages of the ages of the patients at the time of their operations. This shows the majority suffer from ulcers between the ages of 30

and 50, particularly so in life's period of greatest activity, as indicated by the average age of 37.7 years. The range was from 19 to 65 years. The average length of time symptoms had been present before the operation was found to be 5.9 years, the longest single case being of 25 years.

TABLE I—AGE OF PATIENTS AT OPERATIONS

Age limit	Number	Per centage
10-20	1	1
20-30	17	16
30-40	49	47
40-50	22	21
50-60	11	12
60-70	4	3
Youngest		19 years
Oldest		65 years
Average		37.7 years
Average length of preoperative symptoms		5.9 years

In Table II, the nationalities, or more accurately the birthplaces, are arranged so that a percentage can be computed. This figure would, of course, vary in different localities but certainly does show a high percentage of Irish born and a practical absence of Semetics whose presence would naturally be expected. There was one Negro in this series.

TABLE II—NATIONALITIES OF PATIENTS (BIRTHPLACE)

Nationality	Number	Per centage
American	37	41 plus
Irish	19	21
Russian	10	11 plus
Italian	10	11 plus
Balkan	4	4.4
German	3	3.3
British	3	3.3
Scandinavian	2	2.2
Swiss	1	1
Spanish	1	1

Many claims have been expounded as to the dietary effects of certain occupations with a tendency towards producing an ulcer. The occupations were listed by us as nearly as possible under headings where similar conditions of exposure, confinement and continuity of duty would be found. They are so listed in Table III. The

TABLE III

Occupation	Number	Per centage
Chauffeurs truckmen automobile men	14	15
Chanciers ticket agents cashiers	13	14
Elevator men janitors porters ship-ping clerks	11	12
Carpenters painters steamfitters	10	10
Ironworkers	10	10
Firemen policemen	10	10
Laborers longshoremen	7	7
Operators cutters tailors	7	7
Housewives	6	6
Cooks waiters	6	6
Salesmen	5	5
Artists actors bankers	1	1

greatest frequency was observed in chauffeurs and automobile mechanics where 15 per cent occurred.

Duodenal ulcers were found predominant in approximately the same ratio as that calculated by other writers. In Table IV, they are shown with the percentages. Six per cent of the total were marginal ulcers and, in the final calculation, we have corrected for this figure.

TABLE IV.—TYPE OF ULCER

Type	Number	Percentage	Corrected No.	Percentage
Duodenal .....	92	85	97	88
Gastric .....	11	10	13	12
Marginal { Duodenal originally 5 } { Gastric originally 2 }	7	6		

A custom usually followed in such a paper is the recording of preoperative symptoms involving the percentages of those suffering from nausea, pain, hematemesis, loss of weight, etc. We have felt, however, that these are too general conclusions and are elicited depending on the amount of pressure exerted on the patient by the examiner. A point of definite importance, one that can easily be obtained by a review of the history is: Why was the patient subjected to surgical interference? A review of our cases is shown in Table V. Certainly uncontrolled pain as alluded to in the earlier part of the paper is shown here to be by all odds the predominating influence.

TABLE V.—WHY WAS THE PATIENT OPERATED?

Symptom	Number	Per cent
Uncontrollable pain .....	85	79
Obstruction associated with pain.....	10	9
Bleeding associated with pain.....	8	8
Obstruction alone .....	4	3
Obstruction and bleeding.....	1	1

In 111 cases the operation performed has been described and, although no attempt shall be made to enter into a discussion of the choice of operation, it is imperative to have a knowledge of the technic used in order that later we may evaluate the end results. This information is contained in Table VI.

TABLE VI.—TYPE OF OPERATION

Type	Number	Per cent
Gastro-enterostomy with excision 2 pyloroplasty 1 enterostomy 2	85	77
Resection including dissociation of old gastro-enterostomy .....	11	10
Pyloroplasty .....	7	6.5
Simple excision .....	5	4.5
Dissociation .....	3	2

There were 19 cases in this series who suffered from hemorrhages; 11 as a pre-operative complication and 12 postoperatively. There were 7 benefited cases, leaving 4 in which it was recurrent following the operation. If these cases are grouped in the classification mentioned earlier, it will be found that those who failed to be improved by surgery were in the second, third and fourth groups, while those benefited were mostly in the first and fifth. There was one case of a marginal ulcer which was considered cured but which two years later recurred even while under observation. There was one case operated twice with no relief from bleeding.

The question as to what percentage of patients develop gastrojejunal or marginal ulcers following a short-circuiting operation where the jejunum is attached to the stomach as in a gastro-enterostomy or in some forms of stomach resection, is as perplexing to-day as ever, and the controversy between the value of gastro-enterostomies and resections continues. In spite of the claims made, resections of the stomach are followed by marginal ulcers and as our opportunity to study broadens and the time elapsed since the operations lengthens, we are bringing to light more of these cases.

There were 16 cases of marginal ulcers studied in this series. This number occurred following 96 short-circuiting operations, or an instance of 16.7 per cent. These cases were all operated on in the vicinity of New York City, 8 of them being performed at Bellevue Hospital. No one surgeon performed any two operations. Their presence in each case was proved by repeated x-ray examinations or by operation. The recurrence of symptoms in these cases and the presence of the proved marginal ulcer were so closely associated that we can accept them as occurring simultaneously. The average time that elapsed between operation and recurrence of symptoms with a marginal ulcer was found to be four years. The earliest case was one of only three months' standing; the longest occurred after twelve years of freedom from symptoms. We have reported these cases of marginal ulcer occurring with gastro-enterostomies in great detail elsewhere.<sup>3</sup> The lessons learned and the percentage found proved interesting. There are present in this series 85 postoperated cases of gastro-enterostomies in which 14 marginal ulcers later occurred. This gives a percentage figure of 16.4 per cent. There

are also 11 operations with stomach resection in which 2 cases later shows marginal ulcers. This gives a figure of 182 per cent.

Aside from the computation of percentages, a study of these cases has shown us that marginal ulcers follow to a great extent the same course as a peptic ulcer. Pain with periodicity and intervals with freedom of symptoms for weeks or months occur; also, that these cases respond to medical treatment in much the same manner as any peptic ulcer. We have subjected each case to an active medical régime and have considered operation only when we have been unable to relieve pain. This symptom when persistent is, in our opinion, the result of the marginal ulcer perforating into some adjacent viscus, and the pancreas and transverse colon are the organs most usually involved.

We have found that repeated x-ray examinations may be negative and the marginal ulcer disclosed only at operation, also that a marginal ulcer may not show in every examination made.

There were 106 cases in which the results were interpreted. These end results we have tabulated under three categories: (1) *Cured*. Under this heading we have placed all cases which have been symptom-free since their operation, perform their customary duties, eat regular foods and resume their normal contributions to society. There are 39 patients (37 per cent of the series) found here. This included those following 33 gastro enterostomies, 4 resections, 1 pyloroplasty and 1 simple excision. (2) *Benefited*. In this group are included those individuals who, although still suffering from mild digestive disturbances, resume their former activities and again take part in the competitive field. They must always exercise dietary restrictions and supplement this with occasional alkaline medication. In this group we have 13 others, or 12.2 per cent. They followed ten gastro enterostomies, 2 pyloroplasties and 1 dissociation. (3) *Unimproved*. Under this category we have placed those cases that received no relief, were worse, have died from an ulcer complication, or have had a recurrence of symptoms with original intensity. There are 55 cases, or 51 per cent, that we place in this group. Of these 16 have developed marginal ulcers. Three have died, one four years after operation from an unknown ulcer com-

plication, probably hemorrhage, a second, two years after operation from a gastric hemorrhage, and the other, one year after his first operation when a stomach resection was being performed for a marginal ulcer that had developed. These followed gastro-enterostomies. Thirty-six cases show either no relief or a recurrence of symptoms. These followed 25 gastro enterostomies, 4 pyloroplasties, 4 excision of ulcers, 2 resections, and 1 dissociation of old gastro-enterostomies. There were 11 cases in which no relief whatever was obtained and symptoms continued following the operative procedure. Twelve cases had a recurrence of symptoms under one year. These cases were never materially benefited and must be classed as immediate operative failures.

The remaining 13 cases received relief from their symptoms for varying periods following operation. However, since recurrence was in each instance as severe as originally and was incapacitating, we have classed them as unimproved. There were 6 of these cases in which the recurrence was over five years, and one occurred twelve years after operation.

TABLE VII—END RESULTS

Condition	No of cases	Per centage
<i>Cured</i>		
Gastro enterostomy	33	
Resection	4	
Pyloroplasty	1	
Excision	1	
<b>Total</b>	<b>39</b>	<b>37</b>
<i>Benefited</i>		
Gastro enterostomy	10	
Pyloroplasty	2	
Dissociation	1	
<b>Total</b>	<b>13</b>	<b>12</b>
<i>Unimproved</i>		
No relief under one year	23	
Developed marginal ulcer	16	
Temporary relief with return of previous symptoms	13	
Died (ulcer complications)	3	
<b>Total</b>	<b>55</b>	<b>51</b>

## COMMENT

An individual with a peptic ulcer differs from the ordinary patient in that he is a wanderer going from office to office and clinic to clinic. This is undoubtedly the result of his search for relief from an illness whose cause he so little understands. This wandering or "shopping" is also caused by the fact that "failures do not return." They always hope that the next physician or hospital will provide them with a cure. They present the type of case

that does not respond to a follow-up request and who reports himself as well when, in truth, he may have just recovered from a severe upset and even then be under another doctor's treatment. Thus, the periodicity of this disease plus the failure of the patient to interpret properly symptoms when asked are the reasons we believe letter follow-ups to be of no value.

When one considers that some of these patients have had symptoms for twenty-five years, each remission must fill them with hope or they would be unable to carry on.

In a study of these cases where we have an average combined history and observation period of four years postoperatively with most of them over five years and one covering twenty-two years, we have found so many recurrences coming on long after the case has been classified as cured to give us the belief that all cases should be followed for at least ten years. Many ulcers that would have healed and remained so are never benefited because dietary régime was not continued after the operation. This is one of the most valuable parts the surgeon plays. He should see that the patient does not injure himself by dietary indiscretions.

We feel this direction should continue as long as the period of observation.

Patients come to a physician for relief and cure and the treatment that is to follow depends entirely on their condition and clinical reactions. There is a time when surgery is indicated. Pain unrelieved by medication is the primary indication for surgical intervention. Once such a procedure has been determined, the type of operation should be a matter of surgical judgment at operation.

Our study shows that such surgical procedures offer the possibilities of cures, benefited, and unsatisfactory cases. The ratio of these may not be similar to that of other observers; but surely our figures do not present a very optimistic outlook for the treatment of ulcer sufferers by present methods. Perhaps what we need is an enlarged surgical armamentarium but most likely it is the need of knowing what causes an ulcer.

115 EAST 61ST STREET

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#### A DOCTOR'S FEE IN THE LOUISIANA BAYOUS

When Dr. Payne came home, his neighbors were getting ready to organize a rescue party. He had been away two days, on a remote island across bays and canals and bayous, to bring another little "Injun" into the world. He had had no sleep, for he was too busy fighting mosquitoes, and nothing to eat or drink but coffee, for that had been boiled and was probably harmless. His home is in Napoleonville, La., and Dr. Peel M. Payne tells about it in the Medical Record. "After the little Injun arrived," he says, "the question was asked me 'How much do we owe you?' I told them whatever they thought the 'Bon Dieu' would want them to give me. They

looked at each other, then at me, and said 'We owe you the life of the woman and child; name your price.' I told them five cents for every mosquito bite. The old man asked me if I wanted to own the island.

"I finally told him 'Give me 100 rat skins (\$1.00 each). 'Je suis un homme pauvre, tres pauvre,' he said, 'but you have treated us as though we were rich; you have rendered us "un grand service" and we shall do as you say.' I told him he could keep the 100 rat skins, give me \$75.00 and get me back to Montegut. That was satisfactory to everybody. Muskrats are known as 'Louisiana Gold' but on the whole I preferred dollars."

#### ANTI-INFLUENZA SERUM

An anti-influenza serum has been produced in a horse by the three British scientists who last year isolated the influenza virus, according to a Science Service dispatch from London. The same scientists have found a way of systematically using mice, the most widely available of all animals used in medical research, for intensive experiments in the long-continued war against influenza.

This dual announcement is made in the current issue of *The Lancet*, medical journal pub-

lished in London. The three scientists are Drs. C. H. Andrewes, P. P. Laidlaw and Wilson Smith, all of whom are working at the National Institute for Medical Research Farm Laboratories, at Mill Hill, a suburb of London.

Details concerning the horse serum, the doctors announce, will be published later. For the moment medical men and laymen alike have to wait as patiently as possible for the promised full account of what may prove to be one of the most important medical advances for many years.



## THE SCHILLING HEMOGRAM: ITS VALUE TO THE SURGEON

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That the usual total and differential leukocyte counts are of considerable value to the surgeon cannot be denied. We have all placed considerable dependency upon them and will probably continue to do so. On the other hand, too frequently we have encountered those instances in which the conventional counts were misleading or difficult to correlate with the clinical findings. Confronted with this situation, older surgeons have disregarded the blood count, depending upon clinical judgment entirely; younger surgeons with more dependence upon laboratory findings have been led astray. Such difficulties with the conventional type of count can in a large measure be eliminated by the use of the Schilling hemogram.

A thorough understanding of the origin and development of the various kinds of leukocytes and the fundamental reaction of the blood in the presence of sepsis are basic to interpretation of any blood count. All granular leukocytes, neutrophils, basophils, and eosinophils have their origin in the bone marrow; lymphocytes originate in the lymphatic tissue; mononuclear and transitional cells may originate in the reticulo-endothelial system, but this remains to be fully accepted. We, however, are chiefly concerned with the granular leukocytes (granulocytes), and especially with the neutrophils. The parent cell of the granular leukocytes is the myelocyte which develops from the myeloblast and is normally found in bone marrow only. The maturation of the myelocyte to the adult neutrophil is an important factor in the Schilling count.

The Schilling hemogram is an outgrowth of the Arneth count which is perhaps better known under the title of "shift to the left." It had been recognized for a long time that infection brought about certain definite changes in the leukocytes, especially the neutrophils. It had also been observed that in acute infections, younger or immature forms of neutrophils appeared in the circulating blood in increasing num-

bers. Making use of this knowledge, Arneth studied the blood of infected individuals and divided the neutrophils into five groups depending upon the number of lobules of their nuclei. These groups were further subdivided until there was a total of 21. By counting the number of each different group, certain definite and helpful information was obtained. The term "shift to the left" was used to designate those counts in which there was an increase of the immature forms of neutrophils at the expense of the more mature ones. The Arneth count was and still is very valuable, but it is time consuming and requires an expert technician.

To meet these objections, Schilling modified the Arneth count by reducing the different groups of neutrophils to 4 instead of 21. These groups will be briefly described. The first of these was the myelocyte which never appears in the circulating blood of a normal individual; it has a kidney- or oval-shaped nucleus, often containing nucleoli; the protoplasm contains coarse neutrophilic granules. The next group in order of maturity is the so-called juvenile cell which normally does not appear in the blood stream; this cell has a sausage- or bean-shaped nucleus with nucleoli. The next group is represented by the stab or staff cell; in this cell the nucleus is narrow or band-like and contains no nucleoli; under normal conditions 2 to 5 per cent of these cells appear in the blood stream. The final group contains the adult or segmented form of neutrophil; its nucleus is segmented and the segments are usually connected by threads of nuclear tissue; these cells make up about 63 per cent of the normal white cell count. Furthermore, under the heading of monocytes, Schilling includes both large mononuclear and transitional cells, the separate counting of which is probably of little value. So then, a Schilling hemogram records the percentage of basophils, eosinophils, the various groups of neutrophils, lymphocytes, and monocytes. If the recording is

done in the above order and a line drawn between the stab and segmented cell counts, we are in a position to visualize any "shift to the left."

What happens to the leukocytes in the presence of infection? In the primary stage, the mature neutrophils (segmented forms) are the first line of defense. As these are destroyed, fresh neutrophils are required to replace them. Often in progressing infection, nature is unable to mature the neutrophils rapidly enough and so stab cells commence to appear in the blood in increasing numbers. Many of these show evidence of their own immaturity by degenerative changes and vacuolization. Concurrent with these changes, the

differential diagnoses between urgent surgical conditions and those which require more conservative treatment. It enables us to tell which way the tide of battle is turning. It will often foretell the development of serious complications or predict a fatal outcome hours in advance of the clinical evidence. It enables us to read between the lines, as it were, when we get a normal or subnormal total leukocyte count in the presence of clinical evidence of infection.

To illustrate the value of the Schilling hemogram, the author presents a limited number of actual counts done on patients at the Memorial Hospital during the past year.

TABLE I

Count No.	Total WBC	Per cent Polys.	Bas.	Eos.	Myel.	Juv.	Stab.	Seg.	Lymph.	Mon.	Description
N	7,500	67	1	3	0	0	4	63	23	6	So-called normal
1	14,040	76	0	0	0	1	14	61	22	2	Ae. gangrenous appendix
2	7,960	82	0	0	0	4	19	59	17	1	Ae. gang. appendicitis; mild peritonitis
3	15,040	84	0	0	0	2	32	50	16	0	Rup'd. appendix; gen. peritonitis, death
4	5,240	89	1	0	0	51	27	11	10	0	Same case; 3 days after first count
5	6,200	76	10	0	8	53	13	2	12	2	Same case; 2 days after first count
6	12,240	35	0	0	0	4	43	38	15	1	Perf. peptic ulcer; recovery
7	6,000	53	1	0	2	21	24	6	42	4	Perf. peptic ulcer; death
8	11,720	87	0	0	0	1	33	53	13	0	Rup'd. tubal pregnancy
9	9,440	74	1	2	0	4	12	58	21	2	Subacute P. I. D.
10	12,280	86	0	0	0	10	57	19	13	1	Ae. P. I. D.; small abscess
11	10,830	83	0	0	0	2	26	55	15	2	Septic abort.; thrombophlebitis
12	6,640	72	2	1	0	7	35	30	24	0	Septic abortion; septicemia
13	7,880	64	0	4	2	3	18	41	32	0	Same; 8 days later
14	6,880	73	1	2	0	0	16	57	24	0	Same; day before discharge
15	7,300	86	1	2	2	2	12	69	11	0	Gallstone colic

total leukocyte count is usually on the rise, although in many instances, its curve does not parallel that of the neutrophilic increase. Further advance of the infection results in the appearance of younger neutrophils yet, the juvenile form; finally in the severe type of infection, the myelocytes themselves appear in the blood stream. During this period of progressing infection, gradual disappearance of the eosinophiles will be noted; along with these changes there will be a decrease in the lymphocyte and monocyte counts, also. Such are the changes accompanying progressing infection. With resolution and recovery from the infection, the reverse of these changes occurs until the normal blood picture reappears.

From this theoretical consideration, we now turn to the practical application of the Schilling hemogram. It is of definite diagnostic value. It frequently makes possible

On the first line of Table I can be seen the so-called normal hemogram. Note the double line to the right and left; between these lines are placed all the neutrophils. Also note the single line marking off the column of segmented neutrophils. Increase of the percentages of the immature forms of neutrophils thus constitutes a "shift to the left" in relation to this column. The percentage of polymorphonuclear neutrophils has been included with each hemogram so that comparison between the conventional and Schilling types of count may be readily made.

Count 1 is from a patient admitted with a temperature of 100° F. and pulse of 110 and a diagnosis of acute appendicitis; operation disclosed a gangrenous appendix with no peritoneal involvement. Here the total white blood count and the differential count of the conventional type seems to fit the clinical picture. Note, however, the

positive but slight "shift to the left" in the hemogram.

Count 2 is from a case of acute gangrenous appendicitis with beginning peritoneal involvement; there was some free pus present. The admission temperature was 102° F. and the pulse 130; the duration of symptoms was 24 hours. Note the low total white count, the relatively high percentage of neutrophils, and the more marked "shift to the left," also the absence of eosinophiles and the decrease in lymphocytes and monocytes.

Count 3. This patient was admitted with a temperature of 102° F. and pulse of 120, with symptoms of appendicitis and spreading peritonitis; the onset was less than 16 hours before admission. Immediate operation disclosed a perforated gangrenous appendicitis with general peritonitis; the latter was confirmed by subsequent post-mortem. There is little of note in this count except the definite increase in neutrophils and the moderate "shift to the left."

Count 4 is from the same patient three days later. Note the low total white count, always of bad import; there is, however, a high percentage of neutrophils. The juvenile forms have increased markedly at the expense of the segmented forms. At this time the clinical condition of the patient was fair. The abdomen was soft; there was no vomiting; gas was being passed by rectum; the temperature and pulse were not at all bad. The hemogram was in marked contrast to the clinical picture.

Count 5 is from the same patient two days after the preceding count and about 12 hours before death. Note the finding of 8 myelocytes and the marked increase of juvenile forms. At this time the patient's temperature was 105° F. and the pulse 140.

Count 6 is interesting in retrospect. This patient was admitted with a temperature of 98.6° F. and pulse of 60; there was a history of an attack of severe upper abdominal pain of 24 hours duration following months of indigestion. The abdomen was tense and retracted; there was no vomiting. The question was "is there a perforated ulcer?" No operation was done. Subsequent study revealed a definite duodenal ulcer with adhesions, so apparently

the acute episode was a minor perforation. The hemogram shows a definite "shift to the left."

Count 7 is from a patient admitted to hospital three days after perforation of a peptic ulcer. The admission temperature was 99.4° F. and the pulse 130. The abdomen was distended and board-like. Operation was not done. The patient expired 8 hours after admission. Post-mortem confirmed the clinical diagnosis. Note the low total white count and also the low percentage of neutrophils which might have been misleading. The hemogram, however, vividly portrayed exhaustion of defense.

Count 8. This patient had a ruptured tubal pregnancy of 24 hours duration with a moderate amount of free blood in the peritoneal cavity. Here we see a mild but definite "shift to the left."

Count 9. This patient had a mild pelvic inflammatory disease and was not operated upon. Note the mild reaction.

Count 10. This patient had a real acute pelvic inflammatory disease with later abscess formation. She was admitted with a temperature of 103° F. and pulse of 110. Note the marked increase of juvenile and stab forms at the expense of the segmented forms.

Count 11. This patient had a septic abortion. She was admitted with the usual physical signs and a temperature of 100° F. Conservative treatment was followed until the process had apparently quieted down. Then the uterus was gently emptied, following which the temperature rose to 103° F. The hemogram was done on the same day. Note the mild "shift to the left." Three weeks later the patient was discharged well.

Count 12. This patient developed infection following curettage for an incomplete abortion. She had a thrombophlebitis of the pelvic veins with a clinical septicemia. Note the swing to the left in her hemogram.

Count 13 is from the same patient eight days later. Note the persisting low total white count, the falling neutrophils and the appearance of myelocytes.

Count 14 is also from the same patient, eight days after the above and four days before discharge from hospital. Note the reaction toward recovery. The myelocytes

and juvenile types have entirely disappeared and the eosinophiles have reappeared.

Count 15. This is from a patient who entered the hospital with a normal temperature and increased pulse complaining of pain in the right side of the abdomen with nausea and vomiting. There was some tenderness and spasm of the right rectus. Conservative treatment was followed and subsequent study revealed the condition to be gallstones. Note the moderate shift in this hemogram.

## CONCLUSIONS

The Schilling hemogram offers the surgeon more assistance in certain forms of sepsis than the conventional total and differential white blood counts.

It is very helpful in differentiating acute surgical conditions from those conditions requiring conservative treatment.

It is very valuable as a prognostic aid, often revealing evidence of the onset of serious complications several hours before any clinical change is noted.

302 STATE STREET

## DISEASE CARRIED BY AIRPLANES

Most of the important countries of the world have signed the International Sanitary Convention for Aerial Navigation, which aims to minimize the conveyance of disease from country to country by air. As told by the London correspondent of the A. M. A. Journal, each country undertakes to provide at its aerodromes a sanitary organization adapted to the current needs of prophylaxis.

The sanitary aerodrome will have (1) equipment for taking and dispatching suspected material for examination in a laboratory, if such examination cannot be made on the spot; (2) facilities for the isolation and care of the sick, for the isolation of contacts separately from the sick, and for the carrying out of disinfection and deratization.

In the journey log of the aircraft the following must be entered: 1. Any facts relevant to public health which have arisen in the course of the voyage. 2. Any sanitary measures undergone by the aircraft before departure or at places of call, in application of the present convention. 3. Information concerning the appearance in the country of departure of the following infectious diseases: plague, cholera, yellow fever, typhus and smallpox.

If any of these diseases appear in a noninfected country, the aerodrome authorities shall enter the information in the journey log of any craft leaving it during a period of fifteen days from the receipt of the information. The medical officer of the aerodrome has the right of sanitary inspection of the passengers and crew, and on his advice the embarkation of persons with symptoms of infectious diseases may be prohibited. Aircraft in flight are forbidden to let fall matter capable of causing an outbreak of infectious disease.

Plague, cholera, yellow fever, typhus and smallpox are subject to special measures. For purposes of the convention the period of incubation of plague is reckoned as six days, of cholera five days, of yellow fever six days, of typhus twelve

days, and of smallpox fourteen days. The measures to be adopted on the departure of an aircraft from a local area infected by plague, cholera, typhus or smallpox are (1) thorough cleansing of the aircraft, (2) medical inspection of passengers and crew, (3) exclusion of any person showing symptoms of these diseases as well as of persons in such close relation with the sick as to be liable to transmit these diseases, (4) inspection of personal effects, which shall be accepted only if in reasonable state of cleanliness, (5) in case of plague deratization, if there is any reason to suspect the presence of rats on board.

On arrival from such infected areas the aircraft may be required to land at a prescribed sanitary or authorized aerodrome and the movements of the passengers and crew may be restricted. If there is on board a recognized or suspected case of plague the following measures are applicable: (1) immediate disembarkation of the sick, (2) surveillance of contacts and suspects for a period not exceeding six days, (3) disinfection and disinsectization of personal effects, and (4) deratization. For a case of cholera the measures are similar except that the period of surveillance is five days and the drinking water may be disinfected and emptied. For typhus the measures are similar except for delousing and surveillance for twelve days after this. For smallpox the special measures are vaccination and surveillance for a period not exceeding fourteen days of those on board. In regions in which yellow fever has occurred or is endemic aerodromes must be at an adequate distance from the nearest inhabited center, provided with a water supply protected against mosquitoes and with mosquito-proof dwellings for the aircraft crews and for the accommodation of passengers. The aircraft and cargo must be inspected to see that they do not contain mosquitoes and, if necessary, disinfected. Passengers and crew may be put under surveillance for six days from exposure to infection.

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## EDITORIALS

### Occupational Diseases of the Physician

This vital topic was the subject of a recent scholarly address in London by Dr. Sir Humphry Rolleston, an eminent English physician and baronet. It coincides with the publication in this country of an informing booklet on "Death Rates by Occupations," which reveals among other things the causes that snap the vital thread of the medical man here. We all remember the story of the man who said: "I wish I knew where I was going to die." "What do you want to know that for?" asked his friend. "Sure," he replied, "then I would never go near that place!"

In a similar way, if the doctor knows what ailments are most likely to attack him, he can guard against them, and may be able to add years to the span of his usefulness to his fellow-men. "Physician, heal thyself," is the familiar quotation from St. Luke, but Sir Humphry remarked that the correct translation is "treat thyself," and perhaps we may modify it to "care for thyself," and may urge the doctor to watch for the diseases that beset his profession, and at least to use the

common sense in taking care of himself that he enjoins on his patients and too often disregards in his own case with a reckless courage that is as unwise as it is admirable.

The death-rate for American physicians and surgeons is gravely higher than the general figure for all the workers covered in the study of "Death Rates by Occupations." The medical death rate is 10.69 per thousand, as against 8.70 for all "gainfully occupied males." The study covers ten states, including New York. An even worse contrast appears when we see that the rate for all professional men (including the doctors) is only 7.00, bringing the medical rate more than 50 per cent above the general professional level. Those who revel in statistics may be interested to compare the doctors' rate of 10.69 with the rate of 7.89 for lawyers and judges; 10.33 for clergymen; 2.69 for college presidents and professors; 7.68 for dentists, and 4.88 for trained nurses. The low average age of the nurses may account for their low rate, but what is the reason for the very low mortality of the college presidents and professors? There is something to look into.

Two diseases generally thought to be frequent among active practitioners, says Sir Humphry Rolleston, are angina pectoris and duodenal ulcer, and he observes that worry may well play a part in both. Osler spoke of angina as *morbus medicorum*. At any rate, its incidence among medical men has been considerable.

Surgery has not only its physical strain but its risk of infection, streptococcal, pneumococcal, and syphilitic. An investigation in 1926 at the Manchester Royal Infirmary showed that in the first quarter of the century the death rate of the surgeons was nearly five times that of their medical colleagues. The post-mortem rooms, too, have killed, crippled, or damaged many pathologists investigating the causes of the death of others.

Then there are the bacteriologists, who are exposed to infection in dealing with bacterial cultures. Tularemia, while actu-

ally a rare disease, has attacked laboratory workers both here and in England. Tuberculosis may be started in a laboratory by inhalation. Other diseases that have taken the lives of bacteriologists are enteric fever, typhus, Rocky Mountain fever, yellow fever, plague, glanders, undulant fever and African fever.

Radiologists are affected by various pathological conditions caused by irradiations, chief of which, probably, is radiologists cancer. Sir Humphry recalls that in 1911 Krause referred to the death of 54 radiologists from malignant disease; in 1922 Ledoux-Lebard estimated that 100 radiologists had died from this cause, and in 1934 Colwell and Russ have found that the total is now more than double this figure. A curious fact is that it is the x-ray workers who suffer from malignant disease, while the cases of carcinoma due to radium are remarkably few. The radium workers, on the other hand, tend to suffer from anemia, while the x-ray workers are free from it. It seems that the blood changes produced by radium are of the same character as those described in x-ray workers, but the gamma rays of radium have a much greater tendency than x-rays to produce anemia.

Why do physicians tend to become victims of their own specialty? Some believe that auto-suggestion is responsible. It is not uncommon for a medical man to manifest the symptoms of the disease in which he is especially interested, and a number of them have eventually suffered from organic diseases of the system of the body on which they had previously concentrated their attention.

Turning now to the list of diseases that carry off the physicians and surgeons, as recorded in "Death Rates by Occupations," we are not surprised to find diseases of the heart, by far the most important—looming larger, in fact, than any other three causes put together. Next in importance are cancer and other malignant tumors, followed closely by nephritis, cerebral hemorrhage and softening of the brain, and pneumonia. Then come tuberculosis, cirrhosis of the liver, and appendi-

citis. Far down the list is duodenal ulcer, which Sir Humphry mentioned as frequent among British physicians. Glancing along the figures, we find that the doctors appear to suffer more from heart-trouble than most other workers, and much less than others from tuberculosis. In the cancer column they stand a little higher than the average and in pneumonia and appendicitis are about par.

In short, the doctor is human, and cannot expend his vitality recklessly, day and night, without paying for it himself. That tragic figure of deaths from diseases of the heart tells the story—overwork, overstrain, worry, lack of sleep—there it is, written plain. That is an "occupational disease" that will never cease as long as the doctor breathes the spirit of service and sacrifice that has marked the profession from its beginning and will continue to its end.

### Yellow Fever Not Conquered Yet

The popular idea that yellow fever has been vanquished is a mistake, it seems. We have been lulled into what is perhaps a false sense of security by the fact that the terrible yellow-fever epidemics which used to decimate the populations of New Orleans, Havana, Panama, and other cities around the Gulf and the Caribbean, are no more.

It appears that instead of being wiped out of existence, yellow fever has only retreated to the interior of South America and to the half-civilized regions of West Africa, ready to appear and take its toll again if ever vigilance is relaxed. As far as known, these regions are the main ones now affected, and if they can be cleared up then there will be little or no more virus for the *stegomyia* mosquito, the *Aedes aegypti*, to carry from the sick to the well, and so keep the dread chain of infection going.

The difficulty in tracing our old enemy commonly known as Yellow Jack has been partly due to the fact that the natives in Africa and South America who had it merely knew they were sick, without know-

ing or caring particularly what the name of their misery might be. In one locality everyone had supposed it was the grippé. Again, it can continue for years in a mild form in rural regions without attracting any special notice.

This explains why yellow fever has failed to disappear from Brazil, in spite of determined campaigns in the cities, and why it reappeared in Colombia a few years ago with no signs to show where it came from. It has appeared too, in spots where no *Stegomyia* mosquitoes were found, showing that other carriers may also be guilty.

The ingenuity of the medical workers who have been investigating this matter is worth our notice. The problem was to discover regions where yellow fever prevailed, and it might happen that there was not a single case within a hundred miles of the spot under scrutiny at the moment. But perhaps there had been an epidemic of some sort a few years previous. Was it yellow fever? No one knew. But a test was devised to find out. If it was, then it had left its mark in the blood of the patient, for the blood of one who recovers protects him from yellow fever for the rest of his life. If, then, blood serum from this person is injected, together with yellow fever virus into a healthy white mouse, the mouse will be protected from the virus and will survive. In other words, if the mouse survives, then the person under investigation has at some time had yellow fever. If the mouse dies, he has not.

Many thousands of blood specimens from many parts of the world have been tested in New York, in Nigeria, Africa, and in Bahia, Brazil, and have revealed the fact that yellow fever is still lurking in West Africa and in the interior of South America. Throughout the world indeed, the areas where yellow fever has been found are much larger than would have been expected from known experience with the disease. In the South American investigations another test has also proved useful. Microscopic examination of liver tissue of persons dying after brief febrile illness is a widely used method of discovering fatal cases of the disease. The liver

examinations show where people are dying of yellow fever. In one village in Brazil where yellow fever was suspected not a specimen of the *Aedes aegypti* mosquito was found, but the very first liver specimen betrayed evidence of yellow fever.

These vastly interesting and important investigations are being carried on by the giant efforts of the Rockefeller Foundation and the various governments administering the territory involved. The aim of the Foundation is merely to uncover the conditions, point out the way to cure them, and then hand over the task to the national authorities, who have the necessary police and military power to carry out the health measures required. Informing articles telling in more detail about the work have been published in London, Paris, and various South American cities. American readers will find excellent reports in *The American Journal of Hygiene* (Baltimore) in its issue for November, 1933 and May, 1934. The facts given here are taken from the Foundation's Annual Report, just published.

Incidentally, these yellow-fever investigations developed a method of vaccination against yellow fever by the injection of human immune serum and living yellow fever virus as fixed for mice. It was begun in 1931 and the number of persons vaccinated in the laboratories of the Rockefeller Foundation has now reached 56, principally members of the staff, government officials, missionaries, scientists, and educators going to infected lands. It has been successful. So far as known, no one vaccinated has contracted the disease, although accidental infections in the laboratory and field had previously been frequent and seemingly unavoidable.

This remarkable campaign which is pursuing yellow fever to its most remote and secret hiding places affords a thrilling chapter in the history of our war on disease. But for real thoroughness, we must turn to the *Aedes (Stegomyia) aegypti*, which has been carefully watched at work, and has been found to inject at least 100 infective doses of the yellow fever virus during a single active feeding. That's efficiency.

# News

*of Interest to the Profession*

## THE STATE JOURNAL—PRESIDENTIAL ADDRESS

ARTHUR J. BEDELL, M.D.,  
*Albany*

*Delivered before the Fifth District Branch Meeting at Syracuse, October 2, 1934*

The first issue of the Journal of the New York State Medical Association under the direction of a Publication Committee appeared on January 1, 1901. It was attractive in appearance and neatly printed. Pennsylvania and Illinois had been publishing their journals for a few years, so that ours was the third in the United States. The price was \$1.00 per year. The policy of the Association was to avoid unnecessary controversy but communications from members were solicited.

In March, 1906, James Peter Warbasse became the editor, and the Journal was given a gorgeous yellow cover. To the younger members it might be well to explain that for several years there was the Medical Society of the State of New York and the New York State Medical Association but that in 1906 the organizations were merged under the name of the Medical Society of the State of New York.

At the end of three years Algernon Thomas Bristow took charge and removed the distinctive cover. He served for five years when John Cowell MacEvitt assumed the editorship and presented the Journal in an attractive gray cover.

In 1922 Frederic E. Sondern was the editor with E. Livingston Hunt and Joshua Van Cott associates. It was at this time that as a member of the Publications Committee I became especially interested in the conduct of the publication. In 1923 Nathan B. Van Etten became the acting editor and Orrin S. Wightman and Albert Warren Ferris his associates.

In 1924 Frank Overton was appointed the Executive Editor, while in 1926 Orrin Sage Wightman was elected the editor. He served with fidelity, with interest and marked business ability until the beginning of 1934 when under the press of other affairs he resigned.

Since January 1, 1934, the Journal, which was previously published directly by the Society has been under the control of a Journal Management Committee. Mr. Thomas R. Gardiner then took charge of the business management. There has been no editor or

associate since that time. The Journal is sent to every member of the State Society. According to the present financial arrangement fifty cents is given the business manager for every member and forty cents is allocated to the Journal Management Committee.

I have sketched the life of the Journal so as to interest you in its future. All of the papers read before the Annual Meeting become the property of the State Society and may be published in the Journal. Most of the District Meeting addresses, but only a few of the communications presented before County Societies reach the Journal readers. This is unfortunate. With your help the Journal of the State Society will steadily improve and become one of the dominant voices in organized medicine. This will not be accomplished until we have a full-time editor trained in medicine, versed in the economic upsets of the day and heartily in accord with the State Society management. The editor must have a rare sense of discrimination, a penchant for concise interpretation of all that is going on in the world of medicine. He must be fearless and a man capable of placing before us the actual conditions under which the physician practices and why we object to the encroachments of foundations and state agents. He must have the skill to ferret out and expose the pernicious influences that are attempting to destroy unified, organized medicine. He must have the forcefulness of the erudite Fishbein and the devotion of Whalen whose editorials and comments are of the greatest value to all who appreciate the faithful discharge of a mighty obligation.

The 1934 volume has a distinctive cover and comes to you in an envelope so that you can easily and conveniently read it. The typography of the present issue is far from ideal.

The Journal Management Committee is anxious to receive your criticisms and your help. Under the latter heading it wishes your medical papers. It should be the duty of the Secretary of every County Society to send a concise report of every meeting.



When possible the papers read before his meetings should be sent to the Journal Management Committee so that, if possible, they can appear in the Journal. There should be columns devoted to the actual economic problems of the day. By this I do not mean the theory and practice of economics as it applies to the universe.

The Secretary of The State Society should have an information column in every issue of the Journal. The Executive Officer should have a space devoted to the pluses of our organization under his direct management. The standing committees should so report on their activities that as soon as their findings have been acted upon and officially adopted by the House of Delegates, Council, or Executive Committee, they can be published so that every member of the State will know the stand taken by the elected officers. There is a definite provision in our By Laws which says

No findings of a Committee shall be binding upon the Medical Society of the State of New York until ratified by the House of Delegates or by a two thirds vote of the Council sitting ad interim."

Had this mandatory rule been followed we would not have the irritation and constant need of denying that the State Society has a State Fee Bill, nor would we at this time

have to disclaim fatherhood of the confiscatory TLRA rates. I or the State Society as such, has never empowered a Committee to adopt any fee schedule.

The reports from the Medico legal department should be explained and where a verdict is rendered the citation should be published. There should be news columns devoted to the outstanding achievements of our members: correspondence and inquiries, communications, etc.

We should return to the plan adopted in the first journals and have a record of deaths. When the men who have served our Society with unselfishness and devotion pass to their reward, a praise should be taken to honor their memory.

The book reviews should be continued just as long as competent reviewers are in charge of the work.

The advertisements must meet the highest ethical standards. The Journal must appear in an attractive readable form.

To discard some of the old and institute the new takes time and money but both of these can be easily secured through our State Society. But what we need most is your individual cooperation as a potential author and as a constant reader. You should learn to use your State Journal.

344 STATE STREET

## "HOW TO KILL A MEDICAL SOCIETY"

Some of our medical exchanges are reprinting 'for the good of the order' the advice that appeared originally in the *Illinois Medical Journal* on "How to Kill a Medical Society". It is worth remembering

- 1 Don't come to the meetings. If you do come, come late.
- 2 If the weather doesn't suit you, don't think of coming.
- 3 If you do attend a meeting, find fault with the work of the officers and other members.
- 4 Never accept office, as it is easier to criticize than to do things. Nevertheless get sore if you are not appointed to a commit

tee, but if you are, do not attend the committee meetings.

5 If asked by the chairman to give your opinion regarding some important matter, tell him you have nothing to say.

6 After the meeting tell everyone how things ought to be done.

7 Do nothing more than is absolutely necessary but when other members roll up their sleeves and willingly and unselfishly use their ability to help matters along, howl that the organization is being run by a clique.

8 Hold back your dues as long as possible, or don't pay at all.

9 Don't bother about getting new members, let George do it.

## MEDICAL BROADCASTS

Scheduled under the auspices of the Medical Information Bureau of the New York Academy of Medicine and the Medical Society of the County of New York from Station WABC, Columbia Broadcasting System

Thursday, December 20, at 11:15 a.m., 15 minutes  
Subject "Modern Trends in the Treatment of Tuberculosis"  
Speaker Dr. Herbert R. Edwards, Director of the Bureau of Tuberculosis New York City Department of Health

## TWO DANGEROUS DRUGS

A warning is sent out by the Federal Food and Drug Administration in view of the widespread use of two dangerous drugs—one which destroys the liver and the other which kills the white corpuscles of the blood. These drugs are cinchophen and amidopyrine. Cinchophen, a chemical anodyne and sedative, is sometimes used by sufferers from neuralgia, rheumatic pains, neuritis and similar conditions. Amidopyrine is frequently found in headache remedies and other pain killers.

"Current medical literature contains many reports which clearly indicate that these drugs are dangerous to health and life," says W. G. Campbell, Chief of the Food and Drug Administration. "The gradual development of serious poisoning from the use of these drugs is often so insidious that the danger is not recognized by the user. Cinchophen causes a degeneration of the liver cells. Amidopyrine may cause a reduction in the number of white blood cells, a condition called agranulocytosis."

In issuing the warning Mr. Campbell made it plain that he was not implying that all headache and rheumatism remedies contained these dangerous drugs. But the fact that some of them do is sufficient reason for the public to be careful. Several manufacturers declare on their labels the presence of these drugs in their medicines, but others

do not. There is no provision in the Food and Drugs Act to compel manufacturers to declare either of these drugs.

The Federal Food and Drugs Act requires manufacturers to declare upon the labels of their products the presence of several narcotic drugs. When the law was passed cinchophen was unknown and the dangerous effects of amidopyrine had not been recognized. For these reasons these drugs were not included in the list.

Under present conditions buyers should observe two precautions. First, read the label and look for statements of the presence of these drugs. If they are not declared and there is any doubt ask the druggist or write to the Food and Drug Administration in Washington and ask for the facts.

In connection with this, the following excerpt of a letter from Parke, Davis & Company, may be of interest:

"It is our opinion that amidopyrine is a very useful drug and that its intelligent therapeutic application should not be abandoned because of the fact that under certain conditions it is capable of doing harm. The same thing is true of many other medicinal substances. If we were to eliminate from the *Materia Medica* all drugs which might, under certain conditions, be harmful there would not be very much left in the way of potent medication."

## SETBACKS FOR CHIROPRACTORS AND NATUROPATHS

Stinging defeats were administered to efforts of chiropractic and naturopathy to aggrandize those cults on election day in Arizona, California, and Oregon. Measures tending to give them more and better standing and authority came up for decision of the voters in all three states, we are told in the *A. M. A. Journal*.

Through the effective work of the state medical associations of Arizona, California and Oregon, and with the aid of many public

spirited citizens both individually and in organizations, the people were kept informed as to the dangers threatened by the proposed measures. As has been mentioned, decisive defeats resulted in each state. The people of Arizona, California, and Oregon are to be congratulated on maintaining their standards of medical care. Apparently the majority of the voters recognized the necessity for protection against ignorance, superstition and incompetence.

## THE SCHOOL PHYSICIAN

The day has gone by when the school physician should judge his success by the number of children examined or the number of defects found, says Dr. Charles H. Keene, President of the American Association of School Physicians. A large number of examinations, he points out, usually indicates hurried and careless, and, therefore, inefficient work. His success should, rather, be judged by the percentage of physical defects corrected and of immunization secured.

The school physicians, too, he adds, in the school Physicians' Bulletin, should know what is being taught, whether it is scientifically accurate, whether it is the whole truth or only a half truth. They should learn what efforts are made to have children apply to daily acts and habits

the information given them. Health information is peculiarly useless unless applied to life situations.

The school physician should be especially active in his contacts with teachers, parents, and pupils to controvert on every occasion the pernicious, blatant, and intentionally misleading advertising that pours up on teachers, parents, and children from the advertisements in newspapers, magazines, and worst of all—because it is frequently mixed with interesting and attractive entertainment—the radio. Unfortunately a large proportion of our people, old and young, believe that any statement appearing in an advertisement must be true. So far as health matters are concerned, the reverse is frequently the real case.

# Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

## Health Officers—Court's Construction of Powers

A case decided a few years ago in a Western state serves as an interesting example of the extent to which the courts will limit the powers given to health officers.\*

The State Statutes contained a provision authorizing the state board of health to designate what diseases should be considered dangerous, communicable or contagious diseases, and made it the duty of health officers to enforce such rules as the state board of health might prescribe with respect to such diseases. The state board of health acting under the statute designated gonorrhea and syphilis as dangerous, communicable diseases. By statute health officers were clothed with authority as the instruments through which the board of health acted in carrying out its powers of "general supervision of the interests of the health and life of the citizens."

A certain eighteen-year-old girl who lived a few miles from an army camp was approached by a deputy sheriff, and after a conversation with her the girl was persuaded to go with him to the office of Dr. C, a city health officer. The doctor thereupon made a physical examination of the girl which was made according to her story against her will. Dr. C informed the girl and her mother that she was suffering from gonorrhea, and told her she would have to go to a hospital, and if she refused her home would be placarded making public the presence of a venereal disease. She signed, at the doctor's request, admission papers for the institution, which she later claimed she signed without knowing their contents. The girl entered the hospital and at that institution a positive report was obtained from a Wassermann test. She remained in the hospital for twelve weeks under treatment for gonorrhea and syphilis. At the end of that time she was discharged as being free from the diseases in their infectious state.

The girl thereafter instituted a suit against the health officer to recover dam-

ages for assault and false imprisonment. Upon the trial the plaintiff testified to a story substantially as indicated above. Dr. C did not take the stand as a witness, and so far as it appeared from the testimony, at the time he made the examination complained of he had no information with reference to the girl's habits, or her conduct, to give him any reasonable grounds of suspicion, furnished by either the deputy sheriff or any other person, to suppose that she was infected with a venereal disease. It was contended on behalf of the doctor that the girl failed to establish a case of assault and unlawful restraint and that the doctor was entitled to act as he did, and that he was under no duty to make known the nature of the information, if there was any such information, which prompted him to act as he did. The trial court adopted the view that under the circumstances the defendant's acts were justified, and ruled that the plaintiff had failed to make out a case against him, and therefore directed a verdict for the defendant.

The girl appealed to the highest court of the State, and the Appellate Court received the entire subject of the power of health officials, and finally concluded that under the circumstances as presented the case should have been sent to the jury, and therefore directed a new trial. In so ruling the Court said in part:

"There is power to protect the public health, it is vested by law in public health boards, to be exercised through reasonable rules and regulations duly promulgated. Whether such rules and regulations are lawful and reasonable, considering the true end in view and personal rights guaranteed citizens by the Constitution, constitute judicial questions beyond the power of the Legislature to foreclose.

Arbitrary power beyond the reach of redress open to an injured citizen, is not vested in boards of health or anywhere else under our system of government. While courts may well be loath to review health regulations promulgated by an executive board under legislative delegated authority, yet in a proper case the duty exists, and, no board, by executive action can close the court and succeed in having its officers remain

\* R— vs C—, 185 N. W. 798

immune from judicial inquiry when a claimed unlawful exercise of authority has been visited upon a citizen, and redress is asked.

"Courts may be controlled by the determination of an executive board skilled as to what constitutes a dangerous communicable disease, and may not attempt to review such classification; but the method adopted or exercised to prevent the spread thereof must bear some true relation to the real danger, and be reasonable, having in mind the end to be attained, and must not transgress the security of the person beyond public necessity. \* \* \*

"It would be an intolerable interference by way of officious meddling for health officers to assert and then assume the power of making physical examination of girls at will for venereal disease. \* \* \* If the health officer had power at all to examine plaintiff, he had no right to exercise it without reasonable cause; such cause to precede examination and in no way to depend upon the result of examination. In any event defendant had no right to suspect and examine plaintiff so long as she had no accuser."

In the course of the opinion the court in deciding the case commented upon the history of the development of the law of public health as follows:

"Measures to prevent the spread of dangerous communicable diseases, and to provide for the isolation and segregation of these diseased, are practically as old as history. It has been said that 'the history of pestilence is the history of quarantine.'"

"The law of Moses segregated the lepers, and their forced cry of 'Unclean! Unclean!' was the forerunner of the modern warning placard.

"Ancient Rome and Greece had their systems under which those infected with leprosy were separated from the well.

"In 1448 the Senate of Venice instituted a code of quarantine, and a few years earlier a regularly organized lazaretto, or pesthouse, was established.

"The Republic of Venice also established the first board of health. It consisted of three nobles, and was called the 'Council of Health'. It was ordered to investigate the best means of preserving health and of preventing the introduction of disease from abroad. Its efforts not having

been entirely successful, its powers were enlarged in 1504, so as to grant it 'the power of life and death over those who violated the regulations for health.' No appeal was allowed from the sentence of this tribunal.

"During the plague in London in 1665 the magistrates consulted to devise means for stopping, or at least impeding, the progress of the disease, and the result of their deliberations was a series of orders which appointed commissioners, searchers, surgeons, and buriers to each district, acting under certain regulations, and which directed the provisions of an old act of Parliament to be in force, for shutting up all such houses as appeared to the proper officers to contain any infected person, and every house which was visited, as it was called, was by those orders marked with a red cross of a foot long in the middle of the door, evident to be seen."

While it is not entirely clear as to whether the lower court dismissed the case at the end of the plaintiff's case or at the end of the entire case, it would seem logical to suppose that the dismissal was made at the end of the plaintiff's case. If this were not so it seems difficult to understand why the doctor and his witnesses did not testify in the case.

The ruling of the Appellate Court was based entirely upon the story told by the plaintiff. It may well be that the doctor could have given testimony if called upon to do so which would have definitely established that he had reasonable grounds to suspect that the plaintiff was a woman who in the interest of public health required an examination. Certainly subsequent events in the case proved that the doctor was right, for his examination definitely established that the woman was a menace to the health of her community. Not only the public but the plaintiff as well benefited by the treatment which she so badly needed and which without the doctor's intervention she probably never would have had.

### HENRY STREET'S MIRACLE

"Present day mortality would be forty per cent higher if the system of public nursing had not been started, and the institution of home sick bed nursing by Miss Lillian D. Wald and the Henry Street Visiting Nurse Service marked the birth of public health nursing," Dr. Louis I. Dublin, vice-president of the Metropolitan Life Insurance Company, stated on November 5, 1934, at a luncheon at the Down Town Association.

"As public nursing spread, mortality dropped. Infant mortality was 20 per cent in 1893 and now is 5 per cent and less; tuberculosis claimed 300 in every 100,000 and now the figure has dropped to

sixty. There is now no real necessity of death through pneumonia or diphtheria nor is there much excuse for deaths at childbirth, which once mounted to alarming figures, if proper nursing, particularly in the home, is provided.

"Henry Street Visiting Nurses have wrought a miracle in this city. Premature deaths have ceased among the four million to which the Service ministers and its influence has spread to Europe, where whatever home nursing systems there are now, have been modeled after Henry Street."

# Index—Vol. 34, 1934

## Original Scientific Articles

Abdominal Pain in Children—Rimer.....	456
Acneform Eruptions—Sulzberger, Rostenberg and Slier .....	899
Acodynia—de Melo and Wilson.....	400
Adenolymphophysis, On the Relation of the Incretin to the Clinical Disturbances of Growth, of Development, and of other Physiological Functions—Barker .....	751
Allergy, Gastro-Intestinal, Diagnosis and Treatment of 224 Cases—Lintz.....	282
Amenorrhea, Study and Treatment of—Elden.....	845
Anemia of the Newborn—Dennett and Ashton .....	595
Anemia, Pernicious—Neurological and Mental Symptoms—Hunt .....	99
Anemia, Pernicious in a Negro—Case Report—Strauss and La Porte.....	1027
Antirachitic Agents, A Five-year Clinical Study of the Prophylactic Value of—De Sanctis and Craig .....	712
Antiseptics, Vaginal, Experimental Evaluation of the use of some During Labor—Doug- las and Rhees.....	996
Anxiety as a Medical Problem—Lorand.....	92
Arterial Diseases, Peripheral, Some Practical Problems in Handling—Scott.....	269
Asphyxia, the Lingual Death Zone—Jackson and Jackson .....	681
Asphyxia, Treatment of in Clinical Disease, with Especial Reference to Recent Devel- opments in the Use of Oxygen in Heart Disease—Barach .....	672
Asphyxia, Prevention During Anesthesia—Flagg .....	665
Aspirin Test, Diagnostic Value of, in Rheumatic Conditions—Wolf .....	818
Appendicitis, Acute—Vickers .....	150
Appendicitis, Mortality of Acute, as related to Clinical Types and Treatment—Wester- mann .....	388
Appendicitis, Vagaries of—Flaherty.....	1064
Bacteriological Technic, Course in—Division of Laboratories and Research New York State Department of Health.....	531
Biliary Dysfunction, Relation to Lithiasis—Whitaker .....	221
Biopsy as an Aid to Diagnosis—Pollitzer.....	462
Birth Injuries, Neurological Aspects and Treatment of—Carlson .....	831
Bone Tumors and Allied Conditions—Hitzrot.....	715
Brain, Physiology of—Henry.....	489
Breast Tumors, Their Origin and Course of Development—Curtis .....	526
Calcified Vessels of the Lower Extremities of a Young Man—Case Report—Rothberg .....	850
Cancer Committees of a Hospital Staff, Function of—Swan .....	495
Cancer Control, Program of the Division of the New York State Department of Health—Simpson .....	652
Cancer, Mammary, Etiological Factors in 200 Women—Adair .....	61
Cancer Problem, Relation of the General Practitioner to—Swan .....	597
Cancer Problem, Relation of the Pathologist to—Curtis .....	598
Cancer Problem, Relation of Pathology to Surgery in—Ferguson .....	602
Cancer Problem, Relation of Radiation to—Holding .....	606
Cancer Problem, Relation of Radium to—Carey .....	604
Cancer Problem, Relation of Surgery to—Harvie .....	599
Carbonated Mineral Waters—The Influence of Natural Carbonated Mineral Water Baths on Blood Pressure and Pulse Rates—McClellan, Joslin and McGuire.....	101
Carcinoma of the Breast, Prophylactic Postoperative Roentgenotherapy for—Leuz, Frantz and Kasabach .....	881
Carcinoma of the Cervix, Early Diagnosis—Sears .....	692
Carcinoma of the Cervix, Treatment of—Healy.....	10
Carcinoma of the Colon and Rectum, Diagnosis and Management—Lahey .....	129
Carcinoma of the Larynx, Indications for Thyrotomy and Laryngectomy—Imperatorii..	51
Carcinoma of the Tonsil—Duffy.....	865
Cardiac Clinic, Diagnostic, Department of Health of New York City—Goodman and Prescott .....	444
Cataract Operation, What I	
Cataract, Senile, When Shc	
Cataract, Senile, Pathology	
Chest Diagnosis, Paper as a Less Expensive Medium—Barnard .....	608
Colloidal Chemistry and Psychiatry—Lang.....	98

Colon, The Irritable—Retan.....	952
Columbia County Department of Health, Organization of the—Collins.....	1067
Columbia County Department of Health, Relation to the Physician—Maxon.....	1069
Columbia County Department of Health, A Modification of the Detroit Plan in Admin- istering Public Health—Van Hoesen.....	1072
Committee Reports—Annual—to House of Delegates of 1934.....	331
Coronary Disease and Its Relation to the Increase of Cardiac Morbidity—Bishop and Bishop .....	393
Coronary Thrombosis—Some Points in the Diagnosis and Prognosis—Halsey.....	237
Death, Sudden, Following the Therapeutic Use of Sodium Salicylate, Case Report— Strauss, Rosenthal and Nocero.....	977
Diabetic Deaths, A Study Based on Autopsies—Hekimian and Vogel.....	385
Diphtheria, Immunization Campaign in Spring of 1934—Parran.....	380
Directorship of School Health Program—Patry .....	105
Eczema of Infancy and Childhood—Peck.....	957
Encephalitis, Epidemic, Recent Advances in Treatment—Neal .....	707
Enuresis, Persistent—A Clinical Study—Campbell .....	190
Epilepsy of Allergic Origin—Clarke.....	647
Erythroblastosis of the Newborn, Treatment of—Arnold and Downey.....	591
Female Sex Hormones, Present Status from Clinical Standpoint—Frank.....	1009
Gallbladder, "Strawberry," A Pathological Study—Cooke .....	789
Gonorrheal Urethritis in the Male—Treatment—Crance .....	725
Gonorrhea, Chronic in the Male, Treatment—Watson .....	728
Gonorrhea in the Female—Ritchie.....	731
Greenland Health Conditions—Duffield.....	403
Gynecology, Non-operative, Physical Measures—McGuinness .....	533
Hard of Hearing, Prevention of—O'Connor.....	771
Head Injury, Further Comments on the Postconcussion Syndrome—Savitsky .....	909
Heart, Failing, of Middle Life—Pardee.....	451
Heart Disease Among Children of School Age—De Porte .....	448
Heart Disease, The Treatment by Total Relation of Thyroid—Berlin and Blumgart.....	1047
Herpes, A Clinical Study with Review of 58 Cases—McFarland .....	637
Hoarseness, Etiology, Symptoms and Diagnosis of the Inflammatory Type—Kreiger..	47
Hoarseness, Tuberculous, Malignant and Syphilitic Types—Jones .....	59
Hoarseness, Benign Neoplasms of the Larynx—Cunning .....	56
Hoarseness, The Nonsurgical Treatment—Voorhees .....	53
Hoarseness, Neurological Aspects—Friedman.....	48
Hypertension and Nephritis—Holmes.....	414
Irradiation of the Entire Body—Craver and MacComb .....	249
Leukocytes in Skin Diseases—Rulison.....	1013
Man as a Complete Organism in Health and Disease—Draper .....	1052
Mind, Diseases of, The Biopsyche Approach to Diseases of the Mind: Its Dependence on Neurology and General Medicine—Kennedy .....	777
Medicolegal Experts, Qualified, Their Value to the Community and to the Medical and Legal Professions—Norris .....	520
Medico-Dental Cooperation, A Practical Discussion of Importance of—Blum.....	970
Nutrition in Infants and Children, Relation of Upper Respiratory Infection—Pease..	146
Neuritis, Cranial—Brock and Wortis.....	88
Oxygen-treated Cases, Analysis of 376 Consecutive Cases from a Study Made at Pres- byterian Hospital, New York, from 1929 to 1932—Barach.....	41
Obesity, Treatment of—McCabe and Hart.....	795
Ovary, Tumors of, Treatment—Taylor.....	13
Pancreatitis, Acute, Complicating Pregnancy—Kingsley .....	889
Peritonitis, Traumatic, An Unusual Case Associated with Anal Perversion—Epstein..	926
Personality Makeup of the Criminal—Brannan .....	626
Physical Therapy in the Chronic Invalid—Leavy .....	405
Physical Therapy, Errors in Practice of—Hadley .....	493
Physical Therapy in a Health Resort—McClellan .....	621
Physical Therapy, The Work of the Council on Physical Therapy of the American Medical Association—Coulter and Carter.....	689
Physical Therapy in Industrial Injuries—Stevens .....	841
Physical Therapy Department in a Hospital—Bauer .....	741
Physical Therapy in General Practice—Harris.....	918
Physician, Family—Past, Present, Future—MacFarlane .....	579

Pitressin Test in Epilepsy—Jacobsen.....	506
Placenta Previa, Management—Phancuf.....	641
Plasma Proteins, The Clinical Significance of—McCann.....	923
Plastic Surgery in the Removal of Excessive Cutaneous Tissues Obstructing Vision—Kahn.....	781
Polioomyelitis, Practical Considerations in the Diagnosis and Treatment—Sands.....	587
Pregnancy, Minor Complaints—Marshall.....	737
Pregnancy and Nephritis—Kuder and Stander.....	5
Pregnancy—A Study of 1,250 Basal Metabolisms During—Hughes.....	873
Pregnancy, Toxemias of and Treatment—Watson.....	1
Premature Infant, the Problem of—Tyson.....	811
Presidential Address—Flaherty.....	433
Presidential Address—Remarks of the Incoming President Acknowledging His Introduction—Bedell.....	519
Presidential Address—A District Branch Meeting Address—Bedell.....	945
Presidential Address—Prepared Physicians—Bedell.....	993
Presidential Remarks—Incoming President's Remarks to the House of Delegates—Bedell.....	475
Proctology, Some Practical Considerations—Yeomans.....	138
Prosthesis for an Excuted Orbit—Frey.....	888
Psychiatric Hospital, Modern, in Relation to Public Health—Wright.....	695
Psychoanalysis in Psychiatric Practice—Glueck.....	438
Radiation, Experimental Studies on—Wood.....	948
Radiography, Soft-Tissue—Carty.....	144
Radiosensitivity, Determination of—Kellert.....	603
Radiotherapy in Disseminated Spinal Arachnoiditis—Selinsky and Harris.....	85
Roentgen Diagnosis of Lesions of the Small Intestines—Goldfarb.....	500
Roentgenographic Differentiation Between Diverticulitis and Cancer of the Sigmoid—Stewart and Illick.....	1075
Schilling Hemogram, Its Value to the Surgeon—Dickinson.....	1085
Serum Sickness: A Clinical and Experimental Study—Wilson, Wyatt, Bennett, Chapman and Knowlton.....	915
Sinus Thrombosis, Treatment—Saunders.....	837
Skin Diphtheria—Case Report—Damon.....	1029
Skin Diseases in Infancy and Childhood, Observations—Fox.....	278
Sputum Examinations and the Practicing Physician—Plunkett and Lincoln.....	870
Scarlet Fever, A Study of Secondary Cases—Best.....	411
Surgery of Infancy and Childhood—Donovan.....	187
Surgery on the Patient with Diabetes Mellitis—Smith.....	175
Surgery in Patients Presenting Pulmonary Disease—Berry.....	183
Surgery in the Patient Presenting Thyroid Disease—Grace and Weeks.....	180
Syphilis, Congenital, Prevention of—Goldberg.....	290
Syphilis, Early Diagnosis Importance and Treatment—MacKee.....	293
Syphilis of the Middle-aged and Elderly, Special Problems in Diagnosis and Treatment—Cannon.....	296
Thoracic Spaces, Drainage—Lilienthal.....	478
Thrombosis, Peripheral Venous, Early Recognition—Rabinowitz and Holtzman.....	973
Tissue Reactivity to Streptococci and Its Bearing Upon the Problem of Arthritis—Hitchcock.....	1022
Tuberculous Pulmonary Cavities—Mayer.....	143
Ulcer, Familial Peptic, Case Report—Dickinson.....	852
Ulcer, Marginal, Second Acute Perforation. Case Report—Denneen.....	611
Ulcer, Peptic—A New Intravenous Therapeutic Agent for Control of—Butman, Schultz and Van.....	105
Ulcer, Peptic, —Church.....	
Undulant Fever—Difficulties in Diagnosis and Treatment—Harris.....	1017
Universities of the Middle Ages—Riesman.....	242
Uterine Bleeding, Management—Farner.....	274
Uterine Bleeding, the Need for Conservatism in Treatment in Women Under 35 Years of Age—Traut.....	965
Uropathy Obstructive, Pertaining to the Bladder—Vander Veer.....	762
Uropathy Obstructive—Upper Urinary Tract—Kimball.....	756
Uropathy Obstructive—Urethral—Paine.....	768
Uterine Myomata, Treatment—Kimbrough.....	18

Venoclysis in Pediatrics, the Continuous Intravenous Method of Fluid Administration—Karelitz .....	631
Vitamin A—Exploitation of—Clausen .....	154
Vitamin D, Milks, Clinical Experience with—Lewis .....	685

General

A.M.A. Scientific Exhibits .....	1040
Annual Meeting—Scientific Program .....	302
Channels for Relief .....	210
Civil Works Administration .....	169
Civil Works Administration .....	114
Civil Works Administration .....	29
Committee on Economics—A Study of Medicine in Industry .....	381
Committee on Economics—Study of Practice of Medicine by Corporations .....	381
Committee on Legislation .....	576
Committee on Public Health and Medical Education Organized Maternal Welfare Work in New Jersey .....	576
Compensation of Physicians for Services Rendered Indigents .....	211
Conference of Chairmen of County Society Committees on Legislation .....	210
Conference of County Society Secretaries—Minutes of 1934 Meeting .....	932
Diphtheria Campaign in New York State .....	1038
Errors that Hamper the Education of Deaf Children .....	112
Executive Committee—Fee Schedules and the State Society .....	1035
Executive Committee—An Invitation to be Declined .....	1035
Executive Officer, Report to Executive Committee .....	167
Federal Income Tax Laws Analyzed for Medical Practitioners .....	119
Gastro-Enterology, First International Congress of .....	1040
Graduate Education .....	577
Hearings .....	209
House of Delegates—Minutes of the Annual Meeting .....	540
Legislation, Committee on .....	164
Legislation Committee, Bulletin No. 2, Jan. 19, 1934 .....	113
Legislation Committee, Bulletin No. 5—1934 .....	208
Legislation Committee, Bulletin No. 6—1934 .....	209
Legislative Bureau, Bulletin No. 7—Feb. 24, 1934 .....	262
Legislative Bureau, Bulletin No. 8—Mar. 2, 1934 .....	262
Legislative Bureau—Special Bulletin .....	264
Medical Practice Act, 1926-1934—Rypins, Harold .....	1039
New York Physicians' Mutual Aid Association .....	29
Pan American Medical Association, The Recent "Floating Congress" of the .....	426
Prize Essays—American Association for the Study of Goiter .....	1039
Prize Essay Announced .....	211
Prize Essays of the Medical Society of the State of New York .....	1035
Public Health and Medical Education Committee .....	426
Public Health and Medical Education Committee .....	82
Public Health and Medical Education Committee .....	383
Public Relations, Committee on .....	112
Public Relations, Committee on .....	211
Second District Branch, Annual Meeting of the .....	1036
School Health Program for the Hard of Hearing Child .....	324
Survey on the Incidence of Cretinism in the United States .....	265
State Journal, The—Presidential Address—Bedell .....	1092
Why So Few Physicians Form a Part of the Organization or Are Employed by National Health Organizations .....	169
Workmen's Compensation, Report of the Committee on .....	74

Obituaries

Alfred Fabian Hess, M.D. ....	24
Wendell C. Phillips, M.D. ....	1031
John Van Duyn, M.D.—Civil War Surgeon and World War Surgeon .....	115
William Henry Welch, M.D.—Lessons of a Great Career .....	510
Linsly Rudd Williams, M.D.—A Tribute .....	72



## Books

Received	34	218	329	428,	473,	518	578
Reviewed	35	125	174	219,	329	428	473, 518 615, 1045

## Editorials

A Crook Born Every Minute, Too	321
A "Five Year Program" to Control Tuberculosis	27
"Alice in Wonderland"	373
A Look at Pending Legislation	256
An "Ample" Life for the Doctor	464
A New Journal of Digestive Diseases	422
A Report on the Plight of Science in Germany	162
A Record Written in Human Lives	319
A Summer Drive for Child Health	573
As the Twig is Bent	513
Aviation Medicine	511
Bedell, Dr Arthur J President Biography and Photograph	429
Blest Be the Ties That Bind	320
Calling Uncle Sam to the Rescue	257
Case Reports	378
Certification of Specialists	71
Child Labor Amendment Dangers	317
Cold Cures and Cold Cash	202
"Cold Soup"	200
Counter Attack Against Diphtheria in New York State	422
Cut Throat Medical Competition	425
Dangerous People at Large	613
Defecatism	373
Denmark Conquers Syphilis	375
Disagreement on Sterilization	109
Doctors and Narcotics	613
"Doctors Say"	27
"Doctor" Shoes—What Next?	321
Doctors' Telephone Refunds	260
Doctors Who Don't Play Ball	108
Drug Pirates	322
Economics	69
Editor for Fifty Years	108
Eye Trouble and 'Aye' Trouble	420
Food and Drugs Act	24
Freshets That Bring Disease	424
Handy Guides to Homicides	160
Health Audits	200
Health and Beauty	159
Helpful Advice for Nazi Invalids	159
How Can We Cure the Over Supply of M D s?	465
Insane Teachers	378
Is This Criticism Just?	612
Kentucky's Gallant Fight	258
Let the Laity Stop Trying to Do the Doctors' Thinking for Them	161
Little Strangers Looking for Homes	377
Making the Public Too Health Conscious	159
Medical Practice Changes—Ethics Never	1033
Medical Sensationalism in the Press	25
Mother's Day 1934	109
Mothers Who Might Have Lived	158
Now Is the Time for Action	107
Nurses and Epidemics	423
Occupational Diseases of the Physician	1089
Patients Who Swindle the Hospitals	204
Proper Description of New Therapeutic Agents	575
Protection of the People Against Unlicensed Attempts to Practice Medicine	162
Putting Common Sense Into Workmen's Compensation	69

Salutatory .....	23
Some Dangers of Socialized Medicine.....	421
Spending \$3,848 to Find One Disease Carrier.....	512
Telephone Charge Adjustments.....	375
That Little "Drop of Ink".....	318
The "Cut-rate" Drug Store.....	465
The Man Must Always Come First.....	71
The More Prosperity, The More Accidents.....	320
The Physician's Part in Politics.....	467
The Race of Stork and Reaper.....	260
The Revised Food and Drug Bill.....	375
The "Team Doctor".....	514
The Tide Is Rising.....	573
Thorns Crackling Down the Ages.....	201
To "Make Motherhood Safe for Mothers".....	468
Twilight of the "Practical" Doctor in Germany.....	424
Unified Action .....	23
Vacation Typhoid .....	614
Wasting the Doctor's Time.....	201
Ways to Reach the Public.....	107
We Move in the "Best Circle".....	574
Where Is the "Old Family Doctor"?.....	466
Whispers, Whispers, Whispers.....	1034
Whither Our Hospitals?.....	26
Why Not More Committees on "High Costs"?.....	107
Yellow Fever Not Conquered Yet.....	1090

### Medicolegal

Amputation of Leg Subsequent to Herniotomy .....	1043
Burn from Lamp Treatment.....	33
Charitable Hospitals—Exemption from Liability for Negligence of Nurse.....	326
Consent to Operation—An Interesting Case.....	214
Contracts—Agreements Between Physicians Limiting Practice .....	172
Death Claimed Due to Delayed Operation.....	217
Death Due to Status Lymphaticus.....	124
Death Following Extraction of Teeth.....	268
Death from Peritonitis.....	516
Diathermy Burn, Alleged.....	1044
Erysipelas Alleged to Have Resulted from Doctor's Negligence.....	216
Evidence—Test to Determine the Truth or Falsity of Testimony.....	266
Explosion of X-ray Tubes.....	471
Health Officers—Court's Construction of Powers .....	1095
Injury to Uvula, Claimed.....	1043
Legal Practice of Medicine—Diagnoses Held Violation of Statute.....	122
Malpractice—A Gratifying Decision by an Appellate Court.....	616
Negligence in Appendectomy, Alleged.....	216
Negligence in Connection with Use of Lane Plate, Claimed .....	328
Negligence in Performing Herniotomy, Claimed .....	472
Negligence Claimed in Performing Tonsillectomy .....	619
Negligence in Tracheloplasty, Claim of.....	327
Negligent Herniotomy, Claimed.....	123
Negligent Operation of the Right Eye, Alleged.....	123
Patient and Physician—Waiver of Privileged Communication.....	515
Physician and Patient—Duty to Warn Patient of Dangers Incidental to Operation.....	470
Plastic Surgery on Nose.....	620
Responsibility of Physician for Negligence of Dentist.....	1041
Steel Particle in Eye.....	124
Treatment of Injuries to Hand Sustained in an Accident.....	124
Treatment of Lacerated Hand at Clinic.....	517
Treatment of Laceration of Thigh.....	620
Treatment of Warts.....	268
Ungrateful Patient, An.....	31

# Authors

Adair, Frank E. (New York).....	61	Ferguson, Russell S. (New York).....	602
Arnold, Douglas P. (Buffalo).....	591	Flagg, Paluel J. (New York).....	665
Ashton, Leslie O. (New York).....	595	Flaherty, Frederiek H. (Syracuse)....	433
Barach, Alvan L. (New York).....	672	Flaherty, Frederick H. (Syracuse)....	1064
Barachi, Alvan L. (New York).....	41	Fox, Howard (New York).....	278
Barker, Lewellys F. (Baltimore, Md.)..	751	Frank, Robert T. (New York).....	1009
Barnard, Margaret W. (New York).....	608	Frantz, Virginia Kneeland (New York)	881
Bauer, Frederiek E. (New York).....	741	Frey, Guernsey (New York).....	888
Bedell, Arthur I. (Albany).....	475	Friedman, E. D. (New York).....	48
Bedell, Arthur J. (Albany).....	519	Glueck, Bernard (New York).....	438
Bedell, Arthur J. (Albany).....	801	Goldberg, Jacob A. (New York).....	290
Bedell, Arthur J. (Albany).....	945	Goldfarb, Samuel L. (New York)....	500
Bedell, Arthur J. (Albany).....	993	Goodman, Morris (New York).....	444
Bedell, Arthur J. (Albany).....	1092	Graec, Roderick V. (New York).....	180
Bennett, James (Syracuse).....	915	Hadley, Lee A. (Syracuse).....	493
Berlin, David D. (Boston, Mass.).....	1047	Halsey, Robert H. (New York).....	237
Berry, Frank B. (New York).....	183	Harris, Harold J. (Westport).....	918
Best, William H. (New York).....	411	Harris, Harold J. (Westport).....	1017
Bishop, Louis Faugeres (New York)....	393	Harris, William (New York).....	85
Bishop, Louis Faugeres, Jr. (New York)	393	Hart, James Finlay (New York).....	795
Blum, Theodor (New York).....	970	Harvie, Peter L. (Troy).....	599
Blumgart, Herrman L. (Boston, Mass.)..	1047	Healy, William P. (New York).....	10
Branham, V. C. (Albany).....	626	Hekimian, Ivan (Buffalo).....	385
Brock, Samuel (New York).....	88	Henry, George W. (New York).....	489
Butman, H. A. (Manhasset).....	195	Hinton, J. William (New York).....	1079
Campbell, Meredith F. (New York)....	190	Hitchcock, Charles H. (Syracuse)....	1022
Cannon, A. Benson (New York).....	296	Hitzrot, James Morley (New York)....	715
Carey, H. W. (Troy).....	604	Holding, Arthur F. (Albany).....	606
Carlson, Earl R. (New York).....	831	Holmes, Maynard E. (Syracuse).....	414
Carter, Howard A. (Chicago, Ill.).....	689	Holtzman, Irving N. (Brooklyn).....	973
Carty, John R. (New York).....	144	Hughes, Edward C. (Syracuse).....	873
Chapman, O. D. (Syracuse).....	915	Hunt, Edward Livingston (New York)	99
Church, Reynold E. (New York).....	1079	Illick, H. Earl (New York).....	1075
Clarke, T. Wood (Utica).....	647	Imperatori, Charles J. (New York)...	51
Clausen, S. W. (Rochester).....	154	Jackson, Chevalier, (Philadelphia, Pa.)	681
Collins, William D. (Hudson).....	1067	Jackson, Chevalier L. (Philadelphia, Pa.)	681
Cooke, H. Hamilton (Rochester, Minn.)	789	Jacobsen, A. Wilmot (Buffalo).....	506
Coulter, John S. (Chicago, Ill.).....	689	Jones, David H. (New York).....	59
Craig, John Dorsey (New York).....	712	Joslin, Eric F. (Saratoga Springs)....	101
Crance Albert M. (Geneva).....	725	Kahn, Keith (New York).....	781
Craver, Lloyd F. (New York).....	249	Karelitz, Samuel (New York).....	631
Cunning, Daniel S. (New York).....	56	Kasabaeh, Haig H. (New York).....	881
Curtis, Stephen H. (Troy).....	526	Kellert, Ellis (Schencetady).....	603
Curtis, Stephen H. (Troy).....	598	Kennedy, Foster (New York).....	777
Damon, Legrand A. (Sonyea).....	1029	Key, Ben Witt (New York).....	803
de Mello, L. (Syracuse).....	400	Kimball, Franeis N. (New York).....	756
Denneen, Edward V. (New York).....	611	Kimbrough, Robert A., Jr. (Philadelphia, Pa.)	18
Dennett, Roger H. (New York).....	595	Kingsley, Charles R. (St. George, S. I.)	889
De Porte, J. V. (Albany).....	448	Kirby, Daniel B. (New York).....	1003
De Sanctis, Adolph E. (New York)....	712	Knowlton, C. (Syracuse).....	915
Dickinson, Arthur M. (Albany).....	852	Krieger William Andrew (Poughkeep-	
Dickinson, Arthur M. (Albany).....	1085	sie) .....	47
Division of Laboratories and Research		Kuder, K. (New York).....	5
New York State Department of Health	531	Lahey, Frank H. (Boston, Mass.).....	129
Donovan, Edward J. (New York)....	187	Lang, H. Beckett (Marey).....	98
Douglas, Gordon (New York).....	996	LaPorte Thomas F. V. (New York)....	1027
Downey, Richard A. (Buffalo).....	591	Leavy, I. M. (New York).....	405
Draper, George (New York).....	1052	Lenz, Maurice (New York).....	881
Duffield, Warren L. (Brooklyn).....	403	Lewis, J. M. (New York).....	685
Duffy, James I. (New York).....	865	Lilienthal, Howard (New York).....	478
Elden, C. A. (Rochester).....	845	Lineoln, N. Stanley (Albany).....	870
Epstein, Samuel (New York).....	926	Lintz, William (Brooklyn).....	282
Farmer, Thomas P. (Syracuse).....	274		

Lorande, Sandor (New York).....	92	Saunders, T. L. (New York).....	837
MacComb, William S. (New York)....	249	Savitsky, Nathan (New York).....	909
MacFarlane, Andrew (Albany).....	579	Schultz, L. J. (Manhasset).....	195
MacKee, George M. (New York).....	293	Scott, W. J. Merle (Rochester).....	269
Marshall, Charles J. (Binghamton)....	737	Sears, Nathan P. (Syracuse).....	692
Mayer, Edgar (Saranac Lake).....	143	Selinsky, Herman (New York).....	85
Maxon, Frank C. (Chatham).....	1069	Sher, J. J. (New York).....	899
McCabe, John (New York).....	795	Simpson, Burton T. (Buffalo).....	652
McCann, William S. (Rochester).....	923	Smith, Beverly Chew (New York)....	175
McClellan, Walter S. (Saratoga Springs)	101	Stander, H. J. (New York).....	5
McClellan, Walter S. (Saratoga Springs)	621	Stevens, John B. (Syracuse).....	841
McFarland, Albert R. (Rochester).....	637	Stewart, William H. (New York).....	1075
McGuinness, Madge C. L. (New York)	533	Strauss, Norman (New York).....	977
McGuire, Grace V. (Saratoga Springs)	101	Strauss, Norman (New York).....	1027
Neal, Josephine B. (New York).....	707	Sulzberger, Marion B. (New York)....	899
Nocero, Michael A. (New York).....	977	Swan, John M. (Rochester).....	495
Norris, Charles (New York).....	520	Swan, John M. (Rochester).....	597
O'Connor, Frederick J. (Syracuse)....	771	Taylor, Howard C., Jr. (New York)...	13
Paine, Arthur H. (Rochester).....	768	Traut, Herbert F. (New York).....	965
Pardee, Harold E. B. (New York)....	451	Tyson, Ralph M. (Philadelphia, Pa.)...	811
Parran, Thomas, Jr. (Albany).....	380	Vander Veer, James N. (Albany)....	762
Patry, Frederick L. (Albany).....	105	Van Hoesen, Louis (Hudson).....	1072
Pease, Marshall Carleton (New York)	146	VanKleeck, L. A. (Manhasset).....	195
Peck, Samuel M. (New York).....	957	Vickers, Denver M. (Cambridge)....	150
Phaneuf, Louis E. (Boston, Mass.)...	641	Vogel, Samuel A. (Buffalo).....	385
Plunkett, Robert E. (Albany).....	870	Voorhees, Irving Wilson (New York)	53
Pollitzer, S. (New York).....	462	Watson, B. P. (New York).....	1
Prescott, Josephine W. (New York)...	444	Watson, Ernest M. (Buffalo).....	728
Rabinowitz, Meyer A. (Brooklyn).....	973	Weeks, Carnes (New York).....	180
Retan, H. Walden (Syracuse).....	952	Westermann, John J. Jr. (New York)..	388
Rhees, Henrietta S. (New York).....	996	Whitaker, Lester R. (Boston, Mass.)..	221
Riesman, David (Philadelphia, Pa.)....	242	Wilson, James R. (Syracuse).....	400
Rimer, Edward Sherrard (New York)..	456	Wilson, James R. (Syracuse).....	915
Ritchie, R. N. (Rochester).....	731	Wolf, Heinrich F. (New York).....	818
Rosenthal, Julius (New York).....	977	Wood, Francis Carter (New York)...	948
Rostenberg, Adolph. Jr. (New York)..	899	Wortis, S. Bernard (New York).....	88
Rothberg, Abraham S. (New York)...	850	Wright, W. W. (Marcy).....	695
Rulison, R. H. (New York).....	1013	Wyatt, T. C. (Syracuse).....	915
Sands, Irving J. (New York).....	587	Yeomans, Frank C. (New York).....	138

